



JOURNAL OF THE CARIBBEAN COLLEGE OF SURGEONS

JCCS; 2021; VOL 1





TELEPHONES
USED TO
HAVE CORDS.
**SO DID
ULTRASONIC
DISSECTORS.**

Experience cordless freedom for yourself.
Test drive the new Sonicision™ curved jaw
cordless ultrasonic dissection system.

**For more information, contact
a Medtronic Product Specialist
at (787)400-3932.**

**For more information from your T&T Medtronic Product Specialist
please contact us -**

Phone : 1-868-708- 8423
Website: <http://www.brydenpi.com/>
Email: MedtronicTeam@brydenpi.com



Official Journal of the Caribbean College of Surgeons

Editorial Committee:

Chief Editor
Deputy Editor
Deputy Editor
Deputy Editor

Prof. Shamir Cawich
Dr. Wesley Francis
Prof. Vijay Naraynsingh
Dr. Lindberg Simpson

Trinidad & Tobago
Bahamas
Trinidad & Tobago
Jamaica

Associate Editors:

Dr. Bill Aiken
Dr. Ian Bambury
Dr. Brian Brady
Dr. Charlie Greenidge
Dr. Sahle Griffith
Dr. Milton Harry
Dr. Marlon Mencia
Dr. Margaret O'Shea
Dr. Shilindra Rajkumar
Dr. Trevor Seepaul
Dr. Yardesh Singh
Dr. Alan Smith
Dr. Myrton Smith
Dr. Eric Williams
Dr. Carlos Wilson

Jamaica
Jamaica
Trinidad & Tobago
St. Lucia
Barbados
Jamaica
Trinidad & Tobago
Barbados
Guyana
Trinidad & Tobago
Trinidad & Tobago
Barbados
Jamaica
Jamaica
Jamaica

Advisory Board:

Dr. Terry Ali
Prof. Ivor Crandon
Prof. Dilip Dan
Dr. Patrick FaSiOen
Dr. Ramesh Jonnalagadda
Prof. Michael McFarlane
Dr. Gordon Narayansingh
Prof. Joseph Plummer
Prof Sir Errol Walrond
Dr. Cameron Wilkinson

Trinidad & Tobago
Jamaica
Trinidad & Tobago
Curacao
Barbados
Jamaica
Trinidad & Tobago
Jamaica
Barbados
St. Kitts & Nevis

Published by
OUT SOURZE IT
Hugh Ferreira - C: 868-788-9202
lanny5052@gmail.com



CONTENTS

Pg 6 PRESIDENT'S MESSAGE

Pg 9 ORIGINAL RESEARCH CONTRIBUTION

Trauma Whipple: An Option in Complex Pancreatico-Duodenal Injuries

Pg 16 CORRESPONDENCE

Letter to the Editor: A Proud Moment for Guyana

Pg 19 EDITORIAL

Social Media and the Medical Profession

Pg 24 ORIGINAL RESEARCH CONTRIBUTION

Colonoscopy data in St. Kitts: results and comparison with guidelines

Pg 29 ORIGINAL RESEARCH CONTRIBUTION

Surgical Tips: How to Make A Braided Cerclage Wire

Pg 33 ORIGINAL RESEARCH CONTRIBUTION

Teaching Simple Surgical Suturing Skills Through Simulation

Pg 38 ORIGINAL RESEARCH CONTRIBUTION

First Video Assisted Thoracoscopic Surgery
Anatomical Lung Resection in The English Speaking Caribbean

Pg 43 TECHNICAL REPORT: HOW I DO IT

Modified Jejunostomy Feeding Tube

Pg 46 ORIGINAL ARTICLE:

Surgery: A Caribbean Perspective

Pg 51 REVIEW ARTICLE:

Evolution of Liver and Pancreas Surgical Sub-Specialty in the Caribbean: Caribbean Chapter of the Americas Hepatopancreatobiliary Association

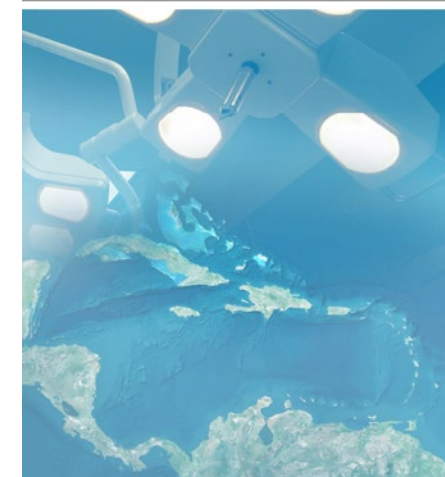
Pg 55- 60 BULLETIN:

- Dr. Cameron Wilkinson receives Royal Award of Commander of the British Empire (C.B.E.)
- Prof. Vijay Naraynsingh recognized by the American College of Surgeons
- Prof. Shamir Cawich recognized by the American College of Surgeons
- Caribbean College of Surgeons published COVID 19 advisory
- Prof. Sir Errol Walrond' book on Medical Ethics published
- Announcing recent graduates in Surgery across the Caribbean

COVER DESIGN



**JOURNAL OF THE CARIBBEAN
COLLEGE OF SURGEONS**



The cover design for the Journal of the Caribbean College of Surgeons depicts a satellite image of the Caribbean region taken from space. The image shows the tranquil beauty of the region on the background of the aqua blue Caribbean Sea.

Although, the Caribbean is relatively small, it casts a large footprint that can be seen far and wide.

The cover also shows the surgical main and satellite lights that we use on a daily basis to illuminate the work that surgeons do. The emblem of the Caribbean College of Surgeons is featured in the top left hand corner, bringing together the qualities of the Caribbean and the work of the surgeons.

The cover was designed by our President, Dr. Cameron Wilkinson, and medical students from the Windsor Medical School, Omair Janjua and Shruti Patel.

PRESIDENT’S MESSAGE

Journal of the Caribbean College of Surgeons:
President’s Message

Dr. Cameron Wilkinson
CBE, CSM, MBBS, MD, FACS, FCCS
President of the Caribbean College of Surgeons
General Surgery, St Kitts
Email: skbdoc@yahoo.com

The year 2020 was very challenging for everyone. The COVID-19 pandemic has wreaked havoc on the world in unprecedented proportions, crippled economies and overwhelmed the health care systems of many countries. The record number of infections and deaths caused worldwide by the virus as it circled the globe was a stark reminder of how susceptible we are to emerging diseases.

Despite not being able to physically host the annual conference in Belize as planned for 2020, the CCOS delivered a successful webinar on June 27, 2020 entitled “COVID-19 the Caribbean Surgical Perspective”.

It was quite apparent from that session, that as a region with limited resources the Caribbean fared better than most developed countries. As a people we followed the non-pharmaceutical prescription that was needed to control the spread of the virus and we are now slowly beginning the move back to near normalcy. Praise must be given to Dr Wesley Francis and team for organizing this virtual meeting in lieu of our annual conference. The attendance at this virtual meeting was over 200 persons.

During my tenure as President, we hosted our annual conference in the islands of Jamaica and St Kitts, and mainland Guyana with the numbers of delegates surpassing 100 each time. The continued influx into the college of young surgeons and steady growth of our membership is reassuring for the future of the college. I take this opportunity to thank all the local organizing committees for their efforts in making these scientific meetings successes.

The WhatsApp group which was established in January, 2019 was quickly embraced as the forum of choice during this pandemic, through which advice on patient treatment was provided and webinar information was shared along with the occasional lighthearted banter to break the ice. Thanks to our Secretary Dr Charles Greenidge for spearheading this initiative.

The Caribbean College of Surgeons’ website has served to keep our members abreast of all upcoming events and current news within the college. We also keep connected through our Facebook page. We were therefore well placed to function in the virtual world into which COVID-19 has forced us.



I am pleased that despite all of the challenges we were able to produce the fourth edition of the Journal of the Caribbean College of Surgeons. I thank the editors, led by Professor Shamir Cawich and all the authors of the scientific papers contained.

The meeting for 2021 will be a virtual one as we continue with the social distancing measures needed until this pandemic is over. We will certainly miss the ceremonial ball where we see the leadership of this august body pass from one President to another. As my presidency comes to a close, I want to take this time to thank all the past presidents who carried the baton of leadership and have selflessly served us over the years. Sir Errol Walrond (2003-2007), Prof Vijay Naraynsingh (2007-2011), Dr Deen Sharma (2011-2015) and Dr Ramesh Jonnalagadda (2015-2017). Having served at the helm for the last four years I understand the challenges and appreciate the support needed to succeed. I therefore thank the executive, committee and council members and general body for giving me the opportunity to serve.

I wish our incoming President Professor Shamir Cawich all the best in his new post from June 2021, and to him and the college I pledge my continued support as the Immediate Past President.

Best regards to all.

A handwritten signature in black ink, reading "C. Wilkinson".

Dr. Cameron A. Wilkinson C.B.E, C.S.M, MBBS, FACS, FCCS
President, Caribbean College of Surgeons

EDITORS NOTE

Publishing to Advance Surgical Practice in the Caribbean

Prof. Shamir O Cawich, FCCS
University of the West Indies
St. Augustine Campus, Trinidad & Tobago
Email: socawich@hotmail.com



We are proud to present you with the latest issue of the Journal of the Caribbean College of Surgeons. This is the fourth year the J.C.C.S. has been in publication and we are pleased to see the traction it has gained.

Authors from across the region have contributed to this issue, demonstrating that Caribbean remains a rich source of knowledge, data and expertise. We hope that the J.C.C.S. continues to serve as a forum to share these data in order to make a meaningful impact in surgical practice for the Caribbean.

In this issue, a wide range of topics is presented. The orthopaedic surgeons in Trinidad & Tobago present their modification of a braided cerclage wire. This report exemplifies the spirit of the surgeons in the Caribbean who often have to adapt to the unique working environment. We thank the authors for the opportunity to share this work.

The experience with trauma Whipple's details an approach to this difficult problem by experts in The Bahamas. There are two papers that provide meaningful contributions to medical education from authors in Guyana and one paper from authors in St. Kitts and Nevis that discusses colonoscopy in the Caribbean.

In these times dealing with the COVID-19 pandemic, there has been marked focus on the use of technology in surgical practice. The paper from experts in Barbados detailing guidelines on social media use in our profession comes in a timely fashion.

We applaud the authors from Jamaica who report the first VATS anatomical lung resection in the Caribbean deserve special commendation for their willingness to pushing the envelope for the benefit of Caribbean people.

We take this opportunity to thank the authors who have spent many hours preparing manuscripts to contribute to this issue of the journal, peer reviewers who have given their invaluable time and expertise as well as the members of the publication and steering committees. Your collective efforts have contributed to the advancement of knowledge and surgical practice in the Caribbean.

Best regards,

Professor Shamir Cawich
Editor in Chief, Journal of the Caribbean College of Surgeons

ORIGINAL RESEARCH CONTRIBUTION

Trauma Whipple: An Option in Complex Pancreatico-Duodenal Injuries

Vantario Taylor, Alfred Dawes, Don Major, Wesley P Francis

Author Details:

Vantario Taylor, MBBS
Senior Registrar
Department of Surgery
Princess Margaret Hospital
Nassau, Bahamas
Email: vantario@gmail.com

Alfred Dawes, MBBS, DM
Senior Medical Officer
Savanna-La-Mar Hospital
Jamaica
Email: alfred.dawes@gmail.com

Don Major, MBBS, DM, FCCS
Fellow in Surgical Oncology
Department of Surgery
Princess Margaret Hospital
Nassau, Bahamas
Email: don.major@gmail.com

Wesley P. Francis, MBBS, DM, FCCS
Consultant Surgical Oncologist
Department of Surgery
Princess Margaret Hospital
Nassau, Bahamas
Email: wesley.francis@gmail.com

ABSTRACT

Background: Major traumatic disruption of the pancreatico-duodenal complex is a very rare event and a successful emergency Whipple's procedure for such injuries is even less frequent. This report documents our experience with this life-saving procedure and describes its place in the trauma surgeon's armamentarium.

Methods: We performed a retrospective review of all trauma patients who presented with complex duodenal and head of pancreas injuries that were managed with pancreatico-duodenectomy. We documented the patient demographics, injury mechanisms, injury grades, management details, morbidity and mortality.

Results: There were three cases identified. Two patients had penetrating trauma and one had blunt trauma. They all presented in hypovolaemic shock, with complex pancreatico-duodenal injuries. All patients were managed with damage control techniques and delayed reconstruction. Drains were utilized in all cases. Pancreatico-gastrostomy was the predominant method to manage the pancreatic remnant. There was one recorded death.

Conclusion: Trauma Whipple for complex pancreatico-duodenal injuries is a practical and reasonable option for well-selected patients. Successful pancreatico-duodenectomy is facilitated by a damage control approach with early controlled external tube drainage of the bile and pancreatic ducts and delayed reconstruction once bleeding and soilage are controlled.

METHODS

We reviewed the Surgical Information System electronic records and operating theatre records of the Princess Margaret Hospital to identify all patients who underwent pancreatico-duodenectomy for trauma over ten years between January 1, 2008 and April 30, 2018. We included all patients with complex pancreatico-duodenal injuries who had emergent operations for trauma. Less severe trauma (AAST grade I-III duodenal or pancreatic injuries) were excluded and elective Whipple procedures were excluded also. We retrieved the records of all patients who fit the inclusion criteria and data were extracted from their clinical records.

RESULTS

We accepted that a limitation of our study was that our institution's records that predate 2015 did not specify all preoperative injuries or procedures for patients who had multiple organ repairs. This could lead to the likelihood of incomplete capture of those with lesser injuries. Notwithstanding this, we identified three patients who had emergency Whipple's pancreatico-duodenectomy after traumatic injuries. The clinical details are outlined below:

Case 1:

A 24-year-old man was brought to the Emergency Department (ED) 20 minutes after sustaining a gunshot wound to the upper abdomen. In the ED, he was diaphoretic and restless. He was hypotensive, with blood pressures recorded at 80/40 mmHg, and tachycardic with pulse rates of 130-140 beats per minute. The pulses were low volume and thready. His abdomen was distended and tender throughout, with guarding and rebound tenderness. There was no evidence of intra-thoracic injury. Intravenous access was obtained, resuscitative measures initiated and he was immediately transported to the operating theatre.

At laparotomy, 2.5 litres of blood was evacuated from the peritoneal cavity. The entire pancreatico-duodenal complex was macerated and there was active bleeding from the pancreas, gastric antrum, duodenum and surrounding vasculature. A 10 x 10 cm non-expanding haematoma was noted in the transverse mesocolon. The kidneys, liver and spleen, vena cava, aorta and small bowel were normal.

The patient required multiple fluid boluses and vasopressor support. Four units of packed red cells and three units of fresh frozen plasma were transfused. Simultaneously, abdominal packing was performed with the aim of arresting haemorrhage and containing spillage. Staplers were used to divide the stomach at its antrum and the duodenum mobilized. Resection of the pancreatico-duodenal complex was made easy by the path the bullet trajectory across the pancreatic neck, just anterior to the superior mesenteric and splenic vein confluence. The jejunum was divided with staplers after mobilizing the duodeno-jejunal flexure and the resection completed. A paediatric feeding tube was used to cannulate the common bile duct as a closed drain.

Temporary abdominal closure was performed, and the patient transported to the intensive care unit (ICU). He was unstable immediately post-operation, requiring continued cardiovascular support with vasopressors, intravenous fluid and blood transfusions. His physiology improved over the next 36 hours, at which time he was taken back to the operating room.

No active bleeding was noted on entering the abdominal cavity. The right colon appeared ischemic and no arterial pulsations were palpated in the mesocolon distal to the haematoma. Therefore, a right hemi-colectomy with end ileostomy was performed. The pancreas was debrided and reconstruction completed by pancreatico-gastrostomy, choledocho-jejunostomy and gastro-jejunostomy. A drain was sited near to the pancreatico-gastrostomy and the abdomen formally closed.

The second postoperative period saw continued improvement and he was discharged from the ICU on day 10 of admission. The peri-pancreatic drain was removed after the small volume effluent showed no increased levels of amylase on post-operative days 5. The patient was discharged from hospital three weeks after admission. The ileostomy was reversed eight months after the initial injury and the patient has done well since.

Case 2:

A 35-year-old man was brought into the ED with severe abdominal pain after being an unrestrained driver involved in a motor vehicle collision. On admission he was alert and oriented. He was normotensive at 133/62 mmHg and tachycardic with pulse rates of 111 per minute. His abdomen was distended, with generalized rebound tenderness and guarding. Besides facial abrasions, no other external injuries were appreciated. A chest x-ray was unremarkable. After emergency room resuscitation, he was taken for exploratory laparotomy.

At operation, one liter of blood and clots were evacuated from the peritoneal cavity. There was a hematoma around the pancreatic head, with near-total transection of the second portion of the duodenum and involvement of the ampulla. A horizontal laceration of the pancreatic head of the pancreas was also found but the main pancreatic duct was spared.

In this case, the duodenum was Kocherized to facilitate pyloric exclusion and the duodenum distal to the injury was stapled closed. An 8F Foley catheter was used to cannulate the common bile duct and two large drains placed along the superior and inferior aspect of the pancreas. Temporary abdominal closure was performed and the patient was transferred to ICU. The estimated blood loss was 2.5 litres.

The patient was mildly acidotic and thrombocytopenic in the early postoperative period. The metabolic issues were corrected over the initial 48 hours in the ICU and he subsequently returned to the operating room for second look laparotomy.

No active bleeding or additional injuries were noted in the abdomen. The retro-pancreatic tunnel was completed, the antrum was staple transected and the jejunum was divided 10cm distal to the ligament of Trietz. The pancreas was separated from the superior mesenteric vessels and then divided. It was felt the patient would not tolerate the entire length of the Whipple procedure because he was still in compensated shock. Therefore, the procedure was abbreviated with multiple drains and temporary abdominal closure.

Resuscitation continued over the ensuing 72 hours after which he was returned to the operating room a third time for the reconstructive stage of the Whipple procedure. At this sitting, a pancreatico-gastrostomy was performed using 3-0 PDS sutures. An end-to-side hepatico-jejunostomy and antecolic gastro-jejunostomy were then fashioned. A Witzel jejunostomy was created before temporary closure and the patient was transferred back to the ICU.

Two days later, the patient was returned to the operating room for planned closure of the abdomen. The anastomoses appeared intact but there was fat saponification noted posterior to the gastro-jejunostomy. Large drains were placed near the pancreatico-gastrostomy and the gastro-jejunostomy and the abdomen was closed.

The postoperative period was complicated by an ISGPF (International Study Group of Pancreatic Fistula) grade-B fistula, as evidenced by drain fluid lipase >30,000 U/L on post-operative day 4. This was managed conservatively and the patient was fed using the jejunostomy tube. He was discharged on day 30 after closure of his abdomen and continued to do well at three months follow up.

Case 3:

A 26-year-old man was brought to the ED after sustaining multiple gunshot wounds to the body. He was in hypovolemic shock, with blood pressure readings of 72/62 mmHg. There were multiple upper and lower limb injuries, with no evidence of bony or vascular injuries. A gunshot wound to the upper inner quadrant of the right buttock was noted and the abdomen was distended with generalized peritonitis. He was quickly resuscitated and taken for exploratory laparotomy.

At laparotomy 3.5 litres of blood and clots were evacuated. There were multiple small bowel enterotomies, a non-destructive caecal injury, complex caudate lacerations, a decimated pancreatico-duodenal complex and active bleeding from the underlying portal vein. This patient was unstable despite aggressive fluid resuscitation, transfusion of three units of packed red cells, three units of fresh frozen plasma, three platelet packs and systemic vasopressors.

A damage control operation was attempted. The stomach was divided at the antrum with staplers and the remaining duodenum Kocherized. The bullet’s path had destroyed most of the overlying pancreas so portal vein could be controlled and repaired primarily. The jejunum was divided with staplers after mobilizing the duodeno-jejunal flexure and the resection completed. A paediatric feeding tube was used to drain the common bile duct and multiple drains were left around the pancreatic stump. Temporary abdominal closure was performed, however, the patient experienced a cardiac arrest shortly after. Resuscitation was not successful. A post mortem examination was unable to determine with certainty that the portal vein repair had dehiscd but did not uncover any additional injuries.

DISCUSSION

Review of large series of abdominal trauma suggests that the risk of injury to the pancreas or duodenum is much higher in penetrating injury compared to blunt injury mechanisms.^{2,7,8,9} Combined pancreatic and duodenal injuries significantly increase complication rates compared to either in isolation. The morbidity and mortality associated with a pancreatico-duodenal injury doubles that of either injury alone.^{2,3,4}

Complete disruption of the pancreatico-duodenal complex is the most challenging scenario. In these situations, when repair is not feasible, a Whipple’s pancreatico-duodenectomy may be a reasonable option. Some trauma textbooks have suggested that a trauma Whipple should only be considered when the injury has already done most of the dissection already.¹⁰ The dilemma is that these patients are usually not sufficiently stable to tolerate a pancreatico-duodenectomy. Not surprisingly then, there are only a handful of detailed reports of Whipple’s for pancreatico-duodenal injury in the literature, with a mean number of 6.5 cases per publication.^{11,12,13,14,15,16} In these series, most of the subjects sustained penetrating injuries and had mortality ranging from 20-100%.^{17,18,19,20,21,22} Our experience was similar, with 66% sustaining penetrating trauma and 33% associated mortality.

There are other options to address combined pancreatico-duodenal injuries. The overarching themes of management are adequate debridement, appropriate drainage, duodenal diversion and nutritional support. With lower grade injuries, simple repair with drainage or repair with exclusion are viable options.^{12,13,14} For higher grade proximal pancreatic injuries, current data supports the effectiveness of closed suction drainage alone.^{6,23} If the pancreatic duct status cannot be ascertained, wide drainage and post-operative ERCP may be more prudent than a resection.²⁴ Our preference for biliary drainage was a 5fr pediatric feeding tube placed in the common bile duct.

Opinion differs regarding the utilization of a Whipple’s procedure for devastating pancreatico-duodenal injuries. Some consider it a first choice when given a grade V pancreatic and duodenal injury^{25,26,27} while others consider it only as a last resort.²⁸⁻²⁹ We advocate a selective approach that is based on injury patterns and the patient physiology, instead of adherence to strict criteria. We believe that an aggressive approach is required in the presence of: massive peri-pancreatic hemorrhage, un-reconstructable pancreatic head injury, intra-pancreatic bile duct injury, proximal main pancreatic duct injury or avulsion of the ampulla of Vater from the duodenum with destruction of the second portion of the duodenum.²⁴ All of our patients had one or more of these indications.

Traumatic pancreatico-duodenal injuries typically are accompanied by other intra-abdominal injuries and significant physiologic derangement. As such, it is generally agreed that damage control (two-stage) surgery is the appropriate approach to the traumatic Whipple.^{17,30,31} Instead of attempting an uncommon, complex procedure in a cold, acidotic and coagulopathic patient, it is prudent to defer the challenging and time consuming reconstruction to a more favorable time.^{29,32,33,34,35,36} The patients at our institution all had staged procedures in keeping with this philosophy. We share the opinion that staging the procedure allows for a firmer pancreas, less bowel edema, and a relatively dilated bile duct, all which make the procedure less technically demanding. However, there are some existing reports of one-stage pancreatico-duodenectomy practiced for these devastating injuries.²⁵ We recognize that for patients with lower injury severity scores this may not influence outcome much,³⁷ but this is not the same as patients with higher injury scores.^{25,38}

While there may be some guidance as to the timing of the Whipple’s procedure in these cases, there is little data as to the ideal reconstruction method. In all cases the pancreas stump is soft and the duct <3mm, which makes it a high-risk gland. Elective experience with pancreatico-gastrostomy suggests that it may offer similar or superior patient outcomes to pancreatico-jejunostomy with respect to postoperative pancreatic fistula, hemorrhage and quality of life.^{39,40,41} Our preference in this series was to reconstruct using pancreatico-gastrostomy because of the gland texture and duct size. Use of fistula risk score calculators would predict the risk of clinically relevant post-operative pancreatic fistula to be 23.7%, which is high-risk. Therefore, we believe the use of this technique would be advisable.⁴²

This report did not focus on patients with lesser duodenal and pancreatic injuries. We feel that the trauma Whipple does have narrow indications and thus remains an option for the surgeon. But patients who do not need it are best served with a less aggressive approach.

CONCLUSION

Complex pancreatico-duodenal injuries can be challenging to the trauma surgeon. An initial damage control approach is often necessary given the associated injuries. In carefully selected patients, a Whipple’s operation performed in a staged manner can be a lifesaving option. We, however, caution its use when the patient is physiologically depleted and for surgeons with little experience in the trauma setting. It therefore remains a seldom-used option.

REFERENCES

1. Akhrass R, Yaffe MB, Brandt CP, Reigle M, Fallon WF, Jr., Malangoni MA. Pancreatic trauma: a ten-year multi-institutional experience. **American Surgeon**. 1997; 63(7): 598-604

2. Blocksom JM, Tyburski JG, Sohn RL, Williams M, Harvey E, Steffes CP, et al. Prognostic determinants in duodenal injuries. **American Surgeon**. 2004; 70(3): 248-55

3. Asensio JA, Feliciano DV, Britt LD, Kerstein MD. Management of duodenal injuries. **Current Problems in Surgery**. 1993; 30(11): 1023-1093

4. Velmahos GC, Tabbara M, Gross R, Willette P, Hirsch E, Burke P, et al. Blunt pancreatoduodenal injury: a multicenter study of the Research Consortium of New England Centers for Trauma (ReCONNECT). **Archives of Surgery**. 2009; 144(5): 413-420

5. Kao LS, Bulger EM, Parks DL, Byrd GF, Jurkovich GJ. Predictors of morbidity after traumatic pancreatic injury. **Journal of Trauma**. 2003; 55(5): 898-905

6. Patton JH, Jr., Lyden SP, Croce MA, Pritchard FE, Minard G, Kudsk KA, et al. Pancreatic trauma: a simplified management guideline. **Journal of Trauma**. 1997; 43(2): 234-241

7. Ivatury RR, Nallathambi M, Rao P, Stahl WM. Penetrating pancreatic injuries. Analysis of 103 consecutive cases. **American Surgeon**. 1990; 56(2): 90-95

8. Ivatury RR, Nallathambi M, Gaudino J, Rohman M, Stahl WM. Penetrating duodenal injuries. Analysis of 100 consecutive cases. **Annals of Surgery**. 1985; 202(2): 153-158

9. Madiba TE, Mokoena TR. Favourable prognosis after surgical drainage of gunshot, stab or blunt trauma of the pancreas. **British Journal of Surgery**. 1995; 82(9): 1236-1239

10. Hirshberg A, Mattox K. Top Knife: **The Art and Craft of Trauma Surgery**. New York: Springer-Verlag; 2006

11. Krige JE, Kotze UK, Setshedi M, Nicol AJ, Navsaria PH. Surgical Management and Outcomes of Combined Pancreaticoduodenal Injuries: Analysis of 75 Consecutive Cases. **Journal of the American College of Surgeons**. 2016; 222(5): 737-749

12. Lopez PP, Benjamin R, Cockburn M, Amortegui JD, Schulman CI, Soffer D, et al. Recent trends in the management of combined pancreatoduodenal injuries. **American Surgeon**. 2005; 71(10): 847-852

13. Mansour MA, Moore JB, Moore EE, Moore FA. Conservative management of combined pancreatoduodenal injuries. **American journal of Surgery**. 1989; 158(6): 531-535

14. Feliciano DV, Martin TD, Cruse PA, Graham JM, Burch JM, Mattox KL, et al. Management of combined pancreatoduodenal injuries. **Annals of Surgery**. 1987; 205(6): 673-680

15. Moore JB, Moore EE. Changing trends in the management of combined pancreatoduodenal injuries. **World Journal of Surgery**. 1984; 8(5): 791-797

16. Graham JM, Mattox KL, Vaughan GD, 3rd, Jordan GL, Jr. Combined pancreatoduodenal injuries. **Journal of Trauma**. 1979; 19(5): 340-346

17. Gupta V, Wig JD, Garg H. Trauma pancreaticoduodenectomy for complex pancreaticoduodenal injury. Delayed reconstruction. **Journal of the Pancreas**. 2008; 9(5): 618-623

18. Gentilello LM, Cortes V, Buechter KJ, Gomez GA, Castro M, Zeppa R. Whipple procedure for trauma: is duct ligation a safe alternative to pancreatojejunostomy? **Journal of Trauma**. 1991; 31(5): 661-678

19. McKone TK, Bursch LR, Scholten DJ. Pancreaticoduodenectomy for trauma: a life-saving procedure. **American Surgeon**. 1988; 54(6): 361-364

20. Oreskovich MR, Carrico CJ. Pancreaticoduodenectomy for trauma: a viable option? **American Journal of Surgery**. 1984; 147(5): 618-623

21. Yellin AE, Rosoff L, Sr. Pancreatoduodenectomy for combined pancreatoduodenal injuries. **Archives of Surgery**. 1975; 110(10): 1177-1183

22. Foley WJ, Gaines RD, Fry WJ. Pancreaticoduodenectomy for severe trauma to the head of the pancreas and the associated structures: report of three cases. **Annals of Surgery**. 1969; 170(5): 759-765

23. Vasquez JC, Coimbra R, Hoyt DB, Fortlage D. Management of penetrating pancreatic trauma: an 11-year experience of a level-I trauma center. **Injury**. 2001; 32(10): 753-759

24. Mattox KL, Moore EE, MK F. Duodenum and Pancreas. In: Mattox KL, editor. **Trauma**. New York: McGraw Hill; 2013. p. 603-19.

25. Asensio JA, Petrone P, Roldan G, Kuncir E, Demetriades D. Pancreaticoduodenectomy: a rare procedure for the management of complex pancreaticoduodenal injuries. **Journal of the American College of Surgeons**. 2003; 197(6): 937-942

26. Damous SHB, Darce GFB, Leal RS, Costa AR, Jr., Ferreira PHA, de Oliveira Bernini C, et al. Three-stage management of complex pancreatic trauma with gastroduodenopancreatectomy: A case report. **International Journal of Surgery Case Reports**. 2018; 44: 70-74

27. Jarnagin WR. **Blumgart's Surgery of the Liver, Biliary Tract, and Pancreas**. Philadelphia, PA: Elsevier. Sixth edition.; 2017; Vol 2 (xxxii): 61-62

28. Chinnery GE, Madiba TE. Pancreaticoduodenal injuries: re-evaluating current management approaches. **South African Journal of Surgery**. 2010; 48(1): 10-14

29. van der Wilden GM, Yeh D, Hwabejire JO, Klein EN, Fagenholz PJ, King DR, et al. Trauma Whipple: do or don't after severe pancreaticoduodenal injuries? An analysis of the National Trauma Data Bank. **World Journal of Surgery**. 2014; 38(2): 335-340

30. Koniaris LG, Mandal AK, Genuit T, Cameron JL. Two-stage trauma pancreaticoduodenectomy: delay facilitates anastomotic reconstruction. **Journal of gastrointestinal surgery**. 2000; 4(4): 366-369

31. Rickard MJ, Brohi K, Bautz PC. Pancreatic and duodenal injuries: keep it simple. **ANZ Journal of Surgery**. 2005; 75(7): 581-586

32. Jacobs LM. The pancreas and duodenum. In: *Advanced Trauma Operative Management: Surgical Strategies for Penetrating Trauma*. Woodbury: Cine'-Med Publishing; 2010.

33. Burch JM, Ortiz VB, Richardson RJ, Martin RR, Mattox KL, Jordan GL, Jr. Abbreviated laparotomy and planned reoperation for critically injured patients. **Annals of Surgery**. 1992; 215(5): 476-484

34. Germanos S, Gourgiotis S, Villias C, Bertucci M, Dimopoulos N, Salemis N. Damage control surgery in the abdomen: an approach for the management of severe injured patients. **International Journal of Surgery**. 2008; 6(3): 246-252

35. Rotondo MF, Schwab CW, McGonigal MD, Phillips GR, 3rd, Fruchterman TM, Kauder DR, et al. 'Damage control': an approach for improved survival in exsanguinating penetrating abdominal injury. **Journal of Trauma**. 1993; 35(3): 375-383

36. Asensio JA, McDuffie L, Petrone P, Roldan G, Forno W, Gambaro E, et al. Reliable variables in the exsanguinated patient which indicate damage control and predict outcome. **American Journal of Surgery**. 2001; 182(6): 743-751

37. Seamon MJ, Kim PK, Stawicki SP, Dabrowski GP, Goldberg AJ, Reilly PM, et al. Pancreatic injury in damage control laparotomies: Is pancreatic resection safe during the initial laparotomy? **Injury**. 2009; 40(1): 61-65

38. Eastlick L, Fogler RJ, Shaftan GW. Pancreaticoduodenectomy for trauma: delayed reconstruction: a case report. **Journal of Trauma**. 1990; 30(4): 503-505

39. Delcore R, Stauffer JS, Thomas JH, Pierce GE. The role of pancreatogastrostomy following pancreatoduodenectomy for trauma. **Journal of Trauma**. 1994; 37(3): 395-400

40. Ecker BL, McMillan MT, Maggino L, Allegrini V, Asbun HJ, Ball CG, et al. Pancreatogastrostomy Vs. Pancreatojejunostomy: a Risk-Stratified Analysis of 5316 Pancreatoduodenectomies. **Journal of Gastrointestinal Surgery**. 2018; 22(1): 68-76

41. Perivoliotis K, Sioka E, Tatsioni A, Stefanidis I, Zintzaras E, Zacharoulis D. Pancreatogastrostomy versus Pancreatojejunostomy: An Up-to-Date Meta-Analysis of RCTs. **International journal of Surgical Oncology**. 2017: 7526494.

42. Pratt WB, Callery MP, Vollmer CM, Jr. Risk prediction for development of pancreatic fistula using the ISGPF classification scheme. **World Journal of Surgery**. 2008; 32(3): 419-428

CORRESPONDENCE

Letter to the Editor: A Proud Moment for Guyana

Brian H Cameron

Author Details:

Brian H. Cameron, MD, DipMedEd, FRCSC

Professor, Division Head, Pediatric Surgery

Director, International Surgical Desk

Canada, HSC-4E7

Email: cameronb@mcmaster.ca

Dear Editor,

On June 21st 2019 at the Caribbean College of Surgeons’ banquet in Georgetown, 17 new members were inducted into Fellowship. Five were from Guyana: Dr. Tameshwar Algu, Dr. Cheetanand Mahadeo, Dr. Shilindra Rajkumar, Dr. Navendra Rambaran and Dr. Rajendra Sukhraj. They are all graduates of the home-grown University of Guyana Post-graduate Diploma in Surgery (PGDipSurg) program initiated 13 years ago.^{1,2} Present to welcome them were a number of proud faculty and examiners, including the pioneering visionaries and leaders of the program, Dr. Madan Rambaran and Dr. Deen Sharma. I was there representing the more than 30 Canadian teaching faculty who visited Guyana over the first decade of the program, and felt the pride of being a surgical mentor to these new CCOS Fellows.

It got me thinking about the meaning of becoming a Fellowship surgeon recognized by one’s peers. What are the knowledge, skills and attitudes required of a CCOS Fellow? What has changed in surgical training in the past 13 years? What are the future needs and challenges for the surgical training program in Guyana?

Let’s start with knowledge. We can all agree that surgical knowledge must start with reading, memorizing, watching and listening. Young Guyanese doctors are as bright as those anywhere and now have access to updated texts and journals. One of the reasons that I chose a surgical specialty was because I thought I could learn everything about it and things wouldn’t change - the course and relations of the ulnar nerve are no different now than when Vesalius described them. However, in the 1990’s Dr. Gordon Guyatt from McMaster gave birth to the phrase “evidence-based medicine”, and I have since learned that much of what I was taught in my surgical residency was, at best, fetish, and at worst fallacy rather than fact. So surgical knowledge does change, best practices require higher levels of evidence, and we must all be life-long learners.

The Guyana PGDipSurg program was based on a curriculum developed in the United Kingdom a decade earlier, but adapted to local surgical conditions and resources. It incorporated small group learning, supervised clinical rotations and rigorous examinations, and graduated 20 surgeons over a decade (2006-2015). Four years ago the residency was lengthened to a 4-year program, based on the same online SCORE curriculum as North American surgical residents. Recently the first 2 graduates successfully passed their final exams and will be granted a Master of Medicine (MMed Surgery) by the University of Guyana later this year.

Knowledge is changing ever more quickly. How do young surgeons learn the critical appraisal skills to sift out the daft and the dangerous from the innovative and effective surgical procedures described in the literature? Evidence-Based Surgery, a new text edited by McMaster’s Dr. Achilles Thoma, includes chapters on how to critique surveys, case-control and cohort studies and randomized trials.³ The authors emphasize that before looking at the study results, one must first look at the methods of a research paper. If the methods don’t stand up to scrutiny, the paper doesn’t deserve a read. Critical appraisal and research methods can be formally taught but are best practiced with peers and senior colleagues in journal club format, such as the “Evidence-based reviews in surgery” program from the Canadian Association of General Surgeons (CAGS).⁴ More of this sort of discussion-based learning would benefit the Guyana training program and model a critical approach to the surgical literature as well as stimulate even better research.

There are tremendous opportunities for clinical research in the Caribbean. Since 2008, the annual Guyana Medical Scientific Conference has been a venue for original research presentations by postgraduate trainees, and the CCOS conference provides an opportunity for the best surgical papers to be shared internationally. This year at CCOS there were 15 clinical papers accepted from the host country - a respectable showing across a wide spectrum including surgical safety checklist, antibiotic prophylaxis, simulation, laparoscopy, transplant, appendicitis, breast cancer, tracheal stenosis, complex plastic reconstruction and surgical site infection. What will it take for Guyana to progress to become the leading incubator for high quality surgical research in the Caribbean?

So much for knowledge - what about surgical skills in a training program? At the end of my training, preparing for a locum in a remote regional hospital in Canada, I spent extra time learning how to be a ‘real’ general surgeon. I knew I would have to perform an emergency caesarian section, pin a hip, take out tonsils and reduce a supracondylar fracture. Then in my first year of practice under the tutelage of my surgical mentors in northern Newfoundland, I expanded my skills to include open prostatectomy and emergency burr-hole. These skills supported me when I moved to become a general surgeon in the Fiji Islands for four years, but truthfully today in Canada that sort of training and practice is neither available nor necessary. Since I returned to Canada for additional training and subspecialized in pediatric surgery, I haven’t done any of those general surgery procedures in decades.

What skills does a general surgeon in Guyana need today, and how can s/he best learn them? Perhaps we should re-look at the needs of the population. Rural and indigenous communities in Guyana are still under-served due to poverty, lack of local access to acceptable care, and challenging terrain for transportation. The World Health Organization estimates that a third of the global burden of disease is surgical and much of that need is still unmet in Guyana, especially in the hinterlands. Injured young people die or are permanently disabled from delayed trauma care past the ‘golden hour’, women and newborns die from prolonged obstructed labour, and simple conditions like appendicitis and hernias become more complicated when safe surgery is not immediately available. But chronic conditions such as diabetes, cardiovascular disease and cancer are starting to become the predominant surgical diseases.

The original objective of Guyana’s surgical training program was to equip surgeons with essential surgical skills to serve the regional and district hospitals, including caesarian section, open fracture, and emergency laparotomy. Young surgical residents in Guyana gain a broad hands-on surgical experience rivaling any training program. The traditional surgical teaching concept has been “See one, do one, teach one”, and the old British model usually meant not calling in the consultant at night. Is this still the best way to learn? Modern surgical education principles suggest that patient safety and surgical quality as well as surgical skills development require supervised graduated responsibility, competency-based learning objectives, and simulated practice to complement the operating room experience.

The original PGDipSurg program has somewhat met the surgical need in the rural areas. Guyanese surgical trainees spent their final six months of training as chief residents at a regional hospital, and often also acted as administrators and change agents. Their final presentations based on those experiences were awe-inspiring to hear, as they reported on their case numbers, complications, challenges and successes. Many stayed on in their regional hospital for some time and one, Dr. Algu of New Amsterdam, continues to mentor younger surgeons as they acclimatize to the regional hospital setting. Retention of surgeons, especially in rural areas, is a universal multi-faceted challenge for Ministries of Health.⁵ Ninety-five percent of graduates still practice in Guyana, however most graduates have returned to Georgetown and have obtained additional outside fellowship training or qualifications (ex. DM or ChM). Dr. Mahadeo completed a Thoracic Surgery fellowship in Canada, and Dr. Sukhraj is returning to Guyana after his Urology DM in Trinidad. Other PGDipSurg colleagues are introducing new expertise in plastics, trauma, endoscopy and laparoscopy, transplant, and ENT surgery. However there is still a need for general surgeons in the rest of the country.

The new Guyana MMed degree models training more along the lines of other current international surgical training programs in core general surgery, anticipating that many may seek further subspecialty training. As surgical sub-specialization in Guyana continues to develop, the definition of core surgical skills for the general surgery training program becomes more challenging. However, there is no question that, for all of us, the acquisition of surgical skills does not end at graduation even though we may feel well prepared for practice. The truly skilled surgeon knows their limitations, seeks mentorship, takes courses and continues to learn. However, concerns that new surgical procedures may be introduced without careful evaluation has led McMaster Children’s Hospital to develop an Innovation Policy for justifying, introducing, and evaluating procedures introduced by surgeons with new surgical skills. Patients deserve the best, but they also deserve protection from potentially harmful or unproven innovative operations.

Having considered knowledge and skills, perhaps the most important facet of a successful surgeon is professional attitudes. Ethical behavior and honest communication - with our patients, families, and each other - is the hallmark of a surgeon who is respected and sought out by their peers. The CCOS Code of Ethics ⁶ begins with a Charter of Patient Rights and continues as a 41-page document that has clearly been developed with integrity and thoughtfulness. It should be required reading - and practice - for us all. The Code of Ethics includes the founding principles of Hippocrates, but more importantly it provides a blueprint for professional recognition and success. All young (and older) surgeons face challenges such as operative complications, disreputable colleagues, difficult families, and unsympathetic administrators. We often need the support of our colleagues in difficult situations, and this is where belonging to a professional society can be supportive.

Professional attitudes include serving one’s professional organizations, as has been demonstrated so capably by Dr. Rajkumar and Dr. Navin Rambaran who were the local organizers of this year’s CCOS conference. Almost all of the 15 Guyanese papers at the CCOS were presented by trainees under supervision of PGDipSurg surgeons, illustrating the importance of professional mentoring. Hippocrates called on physicians “to teach ... this art, if they want to learn it, without fee or indenture”. We learn our professional attitudes from our mentors, without payment, and we pay them forward by mentoring others. As surgeons, we can all continue to reflect on how we can best teach our surgical art, and how we can be life-long learners.

All postgraduate training programs must go through periodic renewal. It is timely for Guyana’s surgical education leaders, along with their collaborators in Canada and in the Caribbean, to reflect on the future needs and challenges of the Guyana surgical training program. Is surgical postgraduate training meeting the needs of Guyana’s population? How can ongoing competency of graduates be assured? What are the needs in faculty development and subspecialty training? What are the roles of external partners? These questions can best be answered by Guyana’s current generation of surgical leaders and educators.

So, what are the requirements to become a Fellowship surgeon? Knowledge, skills and professional attitudes are the core requirements. But ultimately it is the recognition of one’s practice by one’s peers, and that is why the initiation of five Guyana-trained surgeons into CCOS Fellowship is such a significant moment of pride for their training program. They are joining a mentoring organization, with willing and experienced surgical brothers and sisters who will support and guide them, as well as learn from them. I have every confidence that the newest Fellows of the CCOS will rise to the high standards they have set for themselves as pioneering graduates of Guyana’s surgical training program. They are ‘Passing it forward’ to their patients, trainees, and institutions as Hippocrates inspired.

REFERENCES

1. Cameron BH, Rambaran M, Sharma DP, Taylor RH. International surgery: the development of postgraduate surgical training in Guyana. **Canadian Journal of Surgery.** 2010; 53(1): 11-16
2. Cameron BH, Martin C, Rambaran M. Surgical training in Guyana: the next generation. **Canadian Journal of Surgery.** 2015; 58(1): 7-9
3. Thomas A, Sprague S, Voineskos S, Goldsmith C. (Eds.) A Guide to Understanding and Interpreting the Surgical Literature. Evidence-Based Surgery: Springer Nature Switzerland AG. 2019.
4. Canadian Association of General Surgeons. Evidence Based Reviews in Surgery [cited 7 July 2019]. Available from: <https://ebrs.online/published-reviews/>
5. Prashad AJ, Cameron BH, McConnell M, Rambaran M, Grierson LEM. An examination of Eyal & Hursts framework for promoting retention in resource-poor settings through locally relevant training: A case study for University of Guyana Surgical Training Programm. Canadian Journal of Medical Education. 2017; 8(2): 25-36
6. Walrond ER. Caribbean College of Surgeons’ Code of Conduct. 2015 [cited 7 July 2019] 41p. Available from: <http://www.caribbeancollegeofsurgeons.com/documents/Caribbean-College-Of-Surgeons-Code-of-Conduct.pdf>

EDITORIAL

Social Media and the Medical Profession

Errol R. Walrond

Author Details:

Prof. Sir E.R.Walrond KA, FRCS Eng; FACS; FCCS

Past President of the Caribbean College of Surgeons

Consultant General Surgeon

Barbados

Email: erwalrond@gmail.com

At the Annual Clinical meeting of the Caribbean College of Surgeons 2019, an ethical case problem was presented in which a family acquaintance of a seriously ill patient sought to be updated on the patient’s condition through the practitioner’s social media platform. The offer of a face-to-face consultation was ignored by the family acquaintance, and the attempts to obtain information continued over the social media platform and included an invitation to a social event where the face-to-face meeting could occur. The practitioner wished to share the experience and sought advice as to how to avoid such situations in the future.

The Discussant made the following points:

Social media embrace a number of forms of electronic communication where ideas and information are shared with groups of people who may or may not have been chosen by the individual. Messages, which can include pictures and videos, can be widely shared with or without the intention of the person sending the original message. The greatest, but by no means the only, problem in using such media in medical practice is patient confidentiality. In the scenario presented the surgeon involved is contacted via a publicly available social media platform, and is cognisant of the danger of the breach of confidentiality that could occur in discussing a patient’s problem by this means. Although declining to discuss the patient over this platform, the reason why is not made explicit and the overtures continued.

Confidentiality and the Social Media

When using the ‘social media’ medical professionals must consider the impact the communication may have on patients and on the wider public that may be reached. Any communication by public media that are intended for a patient, or any person that the patient has agreed to share the information with, should be marked CONFIDENTIAL and the recipients must have consented to this means of communication in advance.

In making any communication that is intended for or may reach a wider audience, all personalised patient information including distinctive physical features must be removed [facial features may not be the only distinctive feature]. In addition, the content must be professionally worded, accurate and up to date, for poor content not only reflects on the author but on the entire profession.

Medical and other health personnel may have to work under extremely stressful conditions and some distasteful postings have been made in such situations, such as posing with corpses in disaster situations. Such postings intended for a limited number of friends often go ‘viral’ and reach a much wider audience than was intended.

Professional use of Social Media

Advertising, where allowed, is an area where medical professionals can properly use social media. It reaches a wider audience but one must be careful to stick to factual matters, avoid any exaggeration and keep with any guidelines published by one’s local regulatory body or professional representative group.

Another widely used area is for group discussion and consultation; this has its challenges for it is easy to concentrate on a disease process and not take into account the nuances of an individual patient’s needs. Social media are being used in some health care systems for patient and relative communication, both general and individual. A look as what was advocated as an advanced system although intended to show the doctor-patient relationship at the controlling centre of a network of media platforms, could also be interpreted as their being at risk of being overpowered and devoured by a complex network of information and health professionals. In the report given the surgeon has a publicly available social media presence, but realises when approached by this means that it is unsuitable for communication with relatives.

Professional Hazards and the Social Media

The primary professional hazard in using social media for patient care is an unintended breach of confidentiality. This can be brought about by the wider dissemination of the communication by the recipient and any such type of communication should only be done after the explicit warning and informed consent of the patient and the person receiving the communication. Confidentiality may also be compromised by the use of identifiers other than a name, an address or a face, for there may be other distinctive physical features that can be a marker, particularly in small communities.

Opinions on a professional matter may not remain with the original person but may be shared more widely without the specific evidence used to form the opinion. Dissatisfied patients, relatives, colleagues or ‘friends’ may use such platforms to voice anonymous complaints or make slanderous postings that may be difficult to trace. Infatuated patients or relatives may use the social media platform originally used for patient communication and stalk the professional; succumbing to what initially seems socially innocent can turn into a nightmare. Unfortunately, it is not advisable nor is it sustainable to create split professional and personal beings.

The way to minimize such calamities is summarized in the General Medical Council and American Medical Association’s advice, which reminds one to adhere to the principles of good conduct in using the media.^{2,3} On the other hand, the American College of Surgeons advises not to use the social media at all.² The Council of the Caribbean College of Surgeons has accepted the following modifications to its Code of Conduct.

2.4.1. Patient Records

All patient information, including financial information, is confidential. Patient notes must only be handled by relevant staff and the health professionals taking care of the patient. Staff should not allow access to a patient’s notes by any staff or other health professionals without the permission of the patient and the physician in charge of the patient’s care. Patient notes should not be removed without the knowledge of the patient’s physician and/or the supervisor of the patient care area. Patient records being used for report writing, etc. must be kept secure and confidential at all times and should be returned to their secure location as soon as possible.

Because of the possible insecurity of e-mail and the social media, patient records should not be transmitted by these means, except with the expressed and informed consent of the patient; where possible identifying features of a particular patient should be avoided when using these media.

Patient clinical records/information kept in electronic form must have a unique identification number, and must be password protected. Electronic and other records must be kept for reference, research and legal purposes for the lifetime of the patient and after the patient’s death. Records should only be destroyed when the period called the statutory period of limitation has passed; and in such a manner that preserves confidentiality of the information.

The statutory period of limitation should be ascertained in each jurisdiction, but surgeons are warned that it usually runs from the date of any identifiable complication of a procedure, however remote it may be.

Surgeons are reminded that the decision-making, consent process for and description of an operative procedure must be recorded in sufficient detail that they can defend any legal challenge they may face.

2.4.4. Issues in Maintaining Confidentiality

Most difficulties that arise with confidentiality in practice can usually be overcome when practitioners and other health professionals are prepared to discuss openly and honestly with patients the implications of their condition. In particular, where the importance for their continuing medical care of ensuring that other health professionals involved know the nature of their particular needs. If after having carefully discussed the matter and the patient refuses to allow their diagnosis or treatment to be disclosed, the patient’s request for privacy must be respected; unless the patient’s condition or their intended action poses a mortal threat to a third person. When communicating with patients via e-mail or the social media, the insecurity of these media should be expressly acknowledged by the patient, and should be avoided for all sensitive communications.

3.1.2. Comments about Professional Colleagues or Other Staff

A practitioner should not make unwarranted and unsubstantiated comments about a colleague; in particular when such comments are on their views about the colleague’s lifestyle, culture, beliefs, race, colour, sex, sexual preferences or age. Such comments are becoming commonplace on social media and health professionals should not use such media for these purposes, even when they have been subjected to such abuse. When the subject of such abusive remarks it is better to not respond or place the matter in the hand of appropriate authorities.

3.1.4. Professional Conduct and Fitness to Work

It is the duty of a medical practitioner or specialist, where the circumstances warrant, to bring to the attention of the appropriate person or body a colleague whose professional conduct or fitness to work can be called in question. However, a practitioner should not make gratuitous or unsubstantiated comments by word or by social media which are intended, whether directly or by implication, to undermine trust in another medical practitioner’s or specialist’s knowledge or skill.

3.5.1. Confidential Correspondence

Confidential documents and material must be kept separate from open/general correspondence in an office or workplace. Confidential documents including patient records must be kept secure and should not be referenced in any open correspondence or document without the written permission of the administration of the organization.

- Workplace letterheads should not be used for personal correspondence and should be protected to prevent their fraudulent use.
- Files and working papers should not be made available to third parties without the permission of the responsible person or organization.
- Confidential documents should not be transmitted by e-mail or the social media, except with the expressed and written consent of the patient to whom they refer.

3.5.2. Patient Records

Patient records are confidential and should not be read by any unauthorized person. Patient records are the property of the office or institution where the patient attends. A practitioner cannot claim records because they have seen the patient at some time. Patients may request in writing of the office or institution, a copy of their records. Such records should not be transmitted by e-mail or social media, except with the written authorization of the patient to use these media.

Patient records should be kept after the patient's death for reference purposes, and in case the estate of the deceased makes a claim. The minimum period for the statute of limitation on claims varies in jurisdictions and is usually from 3-6 years.

3.5.3. Computers and Mobile Information Devices

Although there is an increasing use of computers in record keeping, practitioners are reminded that their use is more than the substitution of poor handwriting, or better appointment making. Practitioners are also reminded that like hand written notes, not all information may be recorded and they have a duty to review the record, and to correct gaps in information and assessment where they exist.

Practitioners are also reminded that any change in information, like in a written record, should be recorded with the date and time, and that such changes if contested can be detected.

Most importantly patient records should have a unique identifier other than the name of the patient. Unique identifiers assist in protecting the record from electronic intrusion from outside sources and must be carefully considered. The use of widely used national identification numbers is not good security for confidential information. All confidential work done on a computer must be backed up and password protected. Passwords that are unique to the individual practitioner or specialist are essential in institutional settings. This may become an issue when the single practitioner is unexpectedly incapacitated.

Transmission of records via computers and between computers must be done with a view to the confidentiality of the documents and with clear authorisation of the patient where necessary.

3.6.2. Sexual Harassment

Unwelcome sexual advances, requests for sexual favours, and other verbal or physical conduct of a sexual nature can constitute sexual harassment, and constitutes professional misconduct in most jurisdictions. It may include:

- jokes; and the display of posters, cartoons and magazines with sexual content;
- sexually derogatory, physically descriptive or suggestive comments about or towards another individual; including inappropriate use of communications including e-mail, telephone and social media;

- unwelcome touching or physical contact; and
- punishment or favouritism on the basis of an individual's sex.

Sexual harassment has occurred when submission to sexual conduct is made either explicitly or implicitly as a term or condition of employment or advancement in the workplace. Where one party is in a position to extend employment benefits to another, even a completely welcomed, consensual, sexual relationship has the appearance of impropriety and can create an appearance of favouritism. Such relationships can lead to allegations of harassment if the relationship becomes unwelcome. Such harassment directed at a patient is subject to severe penalty by the regulatory bodies. Sexual acts involving practitioners and patients may be subject to criminal prosecution, as well as professional misconduct charges.

Practitioners may have cause for concern by unsolicited declarations of affection by patients, their relatives, and other staff members; or by threats that a complaint will be made on the grounds of a relationship that existed only in the accuser's imagination. It is not prudent to respond in any way to such advances being made via the social media. Except in the case when the situation involves another practitioner, where the matter can be reported to the regulatory authority, a practitioner who is the victim of harassment should seek civil legal remedies.

3.8.1. Advertising

Any advertisement of the services provided by a practitioner that makes invidious comparisons with the services of particular practitioners, with other organisations, or is contrary to the published guidelines by a Council/Board is liable for disciplinary action. Promotional material of individual practitioners or a health care facility should not claim the superiority of any practitioner's qualifications and experience over others.

It is the duty of all medical practitioners or specialists to satisfy themselves that the content and presentation of any material published about the services they provide, and the manner in which it is distributed, conforms to any guidelines approved by the regulatory body in the jurisdiction. This applies whether the practitioner personally arranges for such publication, permits or acquiesces in its publication by others. Any advertisement that is allowed must be truthful and must not involve patients who can be identified in anyway, recognising that there may be other identifying features other than the face.

Practitioners can make available to patients their qualifications and the services they provide. Any publication of false qualifications or claims of specialist status can be subject to disciplinary or criminal sanction. It is imprudent to reproduce promotional materials for patients via the social media, as these may reach a wider audience than intended and may be misconstrued as advertising where this is not allowed and is inappropriate.

3.8.3. Pamphlets and Circulars

It is normally permissible for practitioners to distribute pamphlets, circulars or other written material to patients or in patient care areas to announce leave arrangements and any additions to their practice. The use of social media for this purpose may reach a wider audience than intended.

REFERENCES

1. Weiner JP. Doctor-patient communication in the e-health era. **Israel Journal of Health Policy Research**. 2012; 1(1): 33
2. General Medical Council. Doctors' Use of Social Media. [Available online at: www.gmc-uk.org/-/media/documents.doctors_use_of_social_media.pdf_58833100.pdf] Accessed November 1, 2019
3. American Medical Association. Professionalism in the Use of Social Media. [Available online at: <http://www.ama-assn.org/delivering-care/ethics/professionalism-use-social-media>] Accessed November 1, 2019
4. American College of Surgeons. Statements on Guidelines for the Ethical Use of Social Media by Surgeons. **Bulletin of the American College of Surgeons**. [Available online at: <http://bulletin.facs.org/2019/05/statement-on-guidelines-for-the-ethical-use-of-social-media-by-surgeons>] Accessed November 1, 2019

ORIGINAL RESEARCH CONTRIBUTION

Colonoscopy data in St. Kitts: results and comparison with guidelines

Cameron A. Wilkinson, Cameron G. Wilkinson, Omair Janjua, Shruti Patel

Author Details:

Cameron A. Wilkinson, CBE, CSM, MBBS, MD, FACS, FCCS

Chief of Surgery
Joseph N France General Hospital, St. Kitts
Email: skbdoc@yahoo.com

Cameron Garth Wilkinson, FACS, FCCS

Medical Student
University of Connecticut School of Medicine, U.S.A.

Omair Janjua

Medical Student
Windsor University School of Medicine, St. Kitts

Shruti Patel

Medical Student
Windsor University School of Medicine, St. Kitts

ABSTRACT

Background: The aim of this study was to examine data from symptomatic patients who underwent colonoscopies at the Joseph N. France General Hospital in St. Kitts and compare the findings with standard guidelines for colonoscopy screenings, considering no screening protocol exists in St. Kitts.

Methods: All consecutive colonoscopy reports over a five-year period from January, 2012 to January, 2017 were retrieved and analyzed retrospectively.

Results: 647 procedures were performed over the study period. Caecal intubation was achieved in 96% of cases. The results indicated that 46% of all procedures showed normal findings, 23% had diverticular disease, 14% had hemorrhoids, 7% had polyps, 5% had cancer, 2% had ulcerative colitis, 1% had anal fissures and 2% had other diagnosis including colitis, rectal ulcers and Crohn’s disease. The data was further analyzed according to each diagnosis for determining the mean and standard deviation of age of onset for male and female patients.

Conclusion: The results were compared to standard guidelines for colonoscopy screenings and were shown to support the use of international guidelines in identifying disease as related to the population of St. Kitts.

BACKGROUND:

Colonoscopy is a direct visual examination procedure of the colon and rectum via colonoscope. Among the wide range of screening tests, colonoscopy is considered the gold standard screening method for diagnosing colorectal cancer (CRC).¹ In addition to the ability to visualize the entire colon and diagnose CRC, a colonoscopy may allow removal of polyps that may potentially develop into cancer. It can help identify other diseases such as hemorrhoids, diverticular disease and inflammatory conditions.² Hence, early screening leads to less health issues in the future.

Colorectal cancer carries a life-time risk of nearly 5% in males and females.³ It is the third most common malignancy and the fourth leading cause of cancer deaths worldwide.⁴⁻⁵ The international screening guidelines⁶ recommend that colonoscopy screening should be done for: average risk men and women starting at the age of 50 years; earlier in persons at increased CRC risk; and subsequently every 10 years in the absence of factors that would place them at increased risk.

However, it is well recognized that CRC risk varies widely based on individual diet, environment and hereditary factors. Hence, there are chances that one can present with CRC before they would have reached the threshold for colonoscopy using the criteria listed in international guidelines.

METHODS:

From January 2012 to January 2017, we retrieved the records from all colonoscopies performed by a single surgeon at the Joseph N France General Hospital in St. Kitts & Nevis. The following data were extracted and analyzed: demographics, age, gender, geographic origin, indications for colonoscopy, caecal intubation rate and exam results.

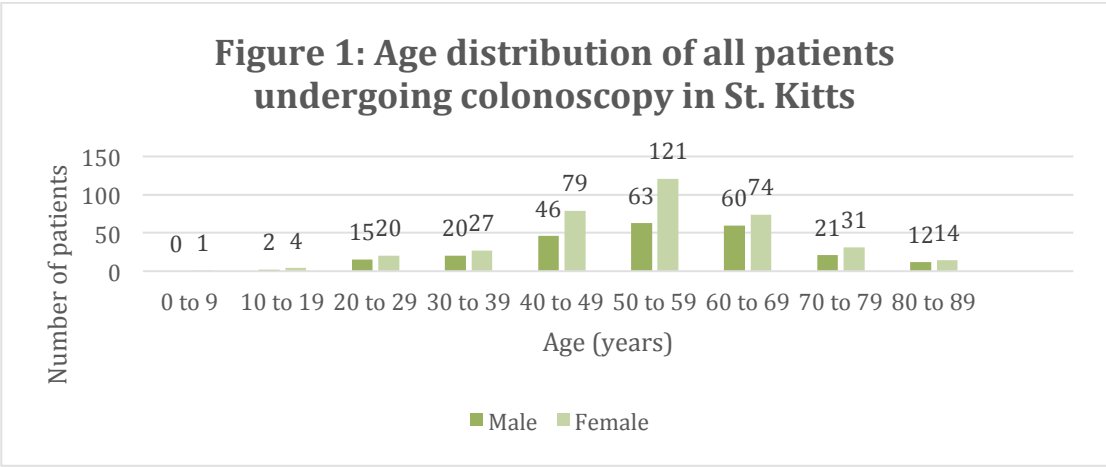
Prior to examination, all patients underwent an informed consent procedure and bowel preparation. This consisted of a magnesium citrate solution administered 24 hours prior to the procedure with concomitant clear liquid diet. Exceptions were made where magnesium citrate was contraindicated or an emergency colonoscopy was necessary. Patients were sedated with titrated doses of intravenous midazolam (70-80 mcg/kg), sometimes combined with propofol (20–200mg). The procedures were conducted with an Olympus EXERA II endoscopy system using standard techniques. Examination results were documented and catalogued following each procedure and histological samples were analyzed within a one-week time frame where indicated. The majority of procedures were performed in the left-lateral position, unless contraindicated.

Upon analysis, patient data was expressed as counts, proportions or standard deviations as indicated. Results were first grouped by diagnosis and then by age. A standard bell-curve distribution of age was created for each diagnosis to be compared to international guidelines. Linear regression was used to determine the predictability of international guidelines against the population of St. Kitts & Nevis.

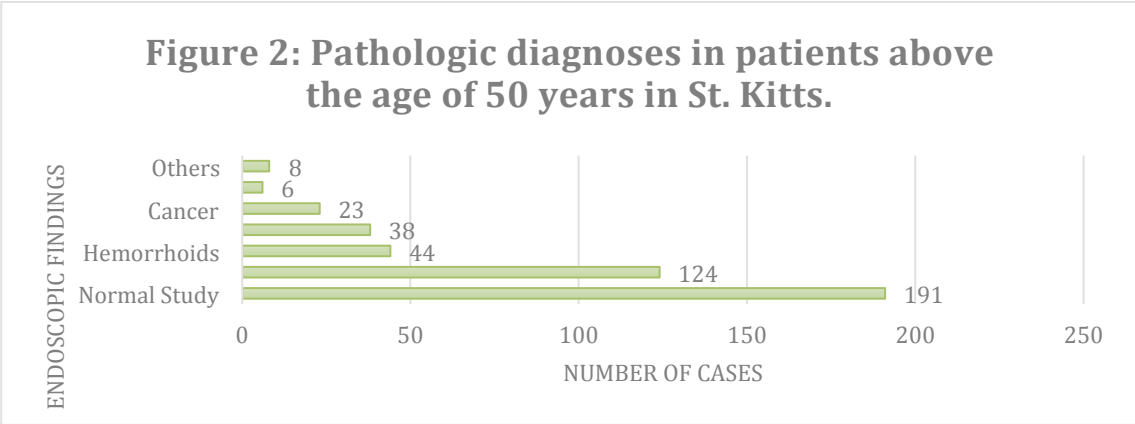
RESULTS:

Over the 5-year period, there were 647 colonoscopies performed. Because Joseph N France General Hospital is the only full-service hospital on the island, patients arrived from, and were representative of, all parishes of St. Kitts.

The mean patient age was 54 years (figure 1). There was no statistically significant difference between the mean age of males (54 ± 15) and females (53 ± 14) patients.



We evaluated the pathologic findings in all patients over the age of 50 years, as this was the recommended age for colonoscopy screening from international guidelines. There were 239 men and 371 women who underwent colonoscopies. Overall, 46% of these patients had normal findings on colonoscopy. The commoner pathologic findings included diverticular disease (23%), hemorrhoids (14%), polyps (7%) and CRC (5%). Figure 2 illustrates all the pathologies identified in this cohort.



*Others includes non-specific findings such as mucosal lacerations, non-specific sigmoid colitis, rectal ulcer and proctitis

Table 1 compares the disease distribution by gender in all patients. Haemorrhoids were commoner in men compared to women (18% vs 12%). Otherwise, there was no statistically significant difference in pathology when analyzed according to gender.

| Pathology | Male | Female | Total |
|----------------------|------------|------------|------------|
| Normal | 103 | 193 | 296 |
| Diverticular Disease | 62 | 87 | 149 |
| Hemorrhoids | 45 | 48 | 93 |
| Polyps | 21 | 27 | 48 |
| Cancer | 16 | 15 | 31 |
| Ulcerative Colitis | 1 | 9 | 10 |
| Anal Fissure | 3 | 5 | 8 |
| Others | 5 | 7 | 12 |
| Total | 256 | 391 | 647 |

We considered diverticular disease, ulcerative colitis, colonic polyps and CRC as the most important pathologies to be identified at colonoscopy because they may develop prior to the onset of symptoms and so benefit the most from screening. Therefore, we calculated the mean patient age at diagnosis for each of these pathologies (Table 2). With the exception of ulcerative colitis, these pathologies were diagnosed at an age beyond the international age threshold to commence screening at 50 years age.

The mean age to diagnose CRC was 59 years (SD ± 14), which was less than one standard deviation away from the international average of 70 years.⁷ This reflects 4 young patients diagnosed with CRC in our population: three men aged 26, 37 and 37 years and one woman at 30 years of age. Without these outliers, the mean age at which CRC was diagnosed would have been 63 years (SD ± 10).

| Pathology | Male | Female | Total |
|----------------------|-----------|-----------|-----------|
| Normal | 53 | 52 | 52 |
| Diverticular Disease | 62 | 62 | 62 |
| Hemorrhoids | 48 | 45 | 46 |
| Polyps | 57 | 58 | 57 |
| Cancer | 59 | 59 | 59 |
| Ulcerative Colitis | 47 | 49 | 49 |
| Anal Fissure | 43 | 39 | 40 |
| Others | 46 | 46 | 46 |
| Total | 52 | 51 | 51 |

DISCUSSION

Colorectal cancer is the third most common cancer and is the fourth leading cause of cancer deaths worldwide.⁴⁻⁵ Few observational studies have demonstrated that screening has been responsible for the reduction in mortality.^{5,8} A randomized trial of screening colonoscopy is underway, but results are not expected for several years.⁸ In the United States, CRC is the third most common cancer and second most common cause of death. The mortality reduction is evident in an observational study of screening colonoscopy, suggesting an effect of greater than 50% reduction in CRC mortality between 1975 and 2011 in the United states.⁹

Currently, colonoscopy is seen as the gold standard for diagnosis of colonic diseases, especially in screening for colorectal cancer due to its high sensitivity and specificity for the detection of polyps. International guidelines recommend that screening for colorectal cancer should begin at the age of 50 years and should be repeated every 10 years if results are negative. Colonoscopy should be performed earlier in persons with high-risk family and/or self-history of CRC and polyposis syndromes.

Looking specifically at the St. Kitts experience, the mean age at which our patients had their first colonoscopy was at the age of 54 years. In addition, our data showed that 69% of all pathologic diagnoses from colonoscopies were made in patients aged 50 years and older. Considering that the mean age to diagnose colonic polyps in St Kitts was 57 years and that for CRC was 59 years, both within one standard deviation of the international guidelines, these data support use of the international guidelines for the population of St. Kitts. This is especially important since there are currently no existing guidelines for St Kitts & Nevis.

Notably, in our population 5 (16%) of the 31 patients diagnosed with colorectal cancer were under the age of 50 years. Additionally, 10 (21%) of the 48 patients diagnosed with colonic polyps were under 50-years of age. These patients would have been missed if the threshold for colonoscopy was based solely on the international guidelines. The incidence of CRC has the propensity to increase in the region as economic conditions improve and there is an increase in the proportion of high fat diets, prevalence of obesity, smoking and alcohol use.¹⁰⁻¹⁹ Considering the shift to younger age groups and the varied lifestyles in this region, it may be prudent to evaluate the wider Caribbean population to develop tailored guidelines for the region.

CONCLUSIONS:

This is the first report the colonoscopy results from St. Kitts & Nevis. The international guidelines are suitable for this population, considering the distribution of gastrointestinal pathologies. It is important to recognize that these are only guidelines and that some pathologies can be missed. Therefore, individual factors such age, gender, hormone therapy, and race should be considered because it plays a significant role in controlling CRC risk.

REFERENCES:

1. Doubeni CA, Corley DA, Quinn VP, et al. Effectiveness of screening colonoscopy in reducing the risk of death from right and left colon cancer: a large community-based study. **Gut** 2018; 67(2): 291-298.
2. Lieberman D. Colonoscopy as a mass screening tool. **European Journal of Gastroenterology & Hepatology.** 1998; 10(3): 225–228.
3. Mankaney G, Sutton RA, Burke CA. Colorectal Cancer Screening: Choosing the right Test. **Cleveland Clinic Journal of Medicine.** 2019; 86(6): 385-392.
4. Arnold M, Sierra MS, Laversanne M, et al. Global patterns and trends in colorectal cancer incidence and mortality. **Gut** 2017; 66(4): 683-691.
5. Pan American Health Organization. Expert Consultation on Colorectal Cancer Screening in Latin America and Caribbean. **PAHO/WHO.** 2016. [Available online at: https://www.paho.org/hq/index.php?option=com_content&view=article&id=11762].
6. World Gastroenterology Organization. International Alliance Guidelines on Colorectal Cancer Screening. 2016. [Available online at: <https://www.worldgastroenterology.org/guidelines/global-guidelines/colorectal-cancer-screening/colorectal-cancer-screening-english>].
7. Colon Cancer Alliance. Risk Determination and Practic Prevention. **Colorectal Caner Alliance Guidelines.** 2017. [Available online at: <https://www.ccalliance.org/get-information/what-is-colon-cancer/statistics>].
8. Kaminski M, Bretthauer M, Zauber A, et al. The NordICC Study: Rationale and design of a randomized trial on colonoscopy screening for colorectal cancer. **Endoscopy** 2012; 44(7): 695–702.
9. Zauber AG. The Impact of Screening on Colorectal Cancer Mortality and Incidence: Has It Really Made a Difference? **Digestive Diseases and Sciences** 2015; 60(3): 681–91.
10. Short MW, Layton MC, Teer BN, Domagalski JE. Colorectal Cancer Screening and Surveillance. **American Family Physician** 2015; 91(2): 93–100.
11. Lieberman DA, Rex DK, Winawer SJ, Giardiello FM, Johnson DA, Levin TR. Guidelines for Colonoscopy Surveillance After Screening and Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer. **Gastroenterology** 2012; 143(3): 844–57.
12. Levin B, Lieberman DA, Mcfarland B, et al. Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. **CA: A Cancer Journal for Clinicians** 2008; 58(3): 130–60.
13. Dharni N, Armstrong D, Chung-Faye G, Wright AJ. Factors influencing participation in colorectal cancer screening-a qualitative study in an ethnic and socio-economically diverse inner-city population. **Health Expectations** 2017; 20(4): 608-17.
14. Sano Y, Byeon J-S, Li X-B, et al. Colorectal cancer screening of the general population in East Asia. **Digestive Endoscopy** 2016; 28(3): 243–9.
15. Felix AS, Avery G, Mutetwa B, Ishmael R, Ragin C, Taioli E. Cancer screening and cancer mortality in Nevis, West Indies. **West Indian Medical Journal** 2009; 58(4).
16. Coughlin SS, Lubetkin EI, Hay JL, Raphael R, Smith SA. Promoting colorectal cancer screening among Haitian Americans. **Journal of Georgia Public Health Association** 2015; 5(2): 149–52.
17. Lee M. Colon cancer screening. **West Indian Medical Journal** 2006; 55(6): 365-7.
18. La, C. Cancer associated with high-fat diets. **Journal of the National Cancer Institute.** 1992; 12: 79-85.
19. Plummer JM, Mitchell DI, Ferron-Boothe D, Meeks-Aitken N, Reid M. Colonoscopy in central Jamaica: results and implications. **West Indian Medical Journal** 2012; 61(6): 27-38.

ORIGINAL RESEARCH CONTRIBUTION

Surgical Tips: How to Make A Braided Cerclage Wire

Marlon Mencia, Terry Ali

Author Details:

Marlon Mencia, MBBS, FRCS, FCCS

Consultant Orthopaedic Surgeon
Port of Spain General Hospital, Trinidad & Tobago
Email: mmencia@yahoo.com

Terry Ali, MBBS, FRCS, FCCS

Consultant Orthopaedic Surgeon
Port of Spain General Hospital, Trinidad & Tobago
Email: drterryali@yahoo.com

ABSTRACT

Background: Wire cerclage has gained widespread use in orthopaedic surgery, and with the increase in peri-prosthetic hip fractures there is a renewed interest in cerclage technology. Unfortunately, the appropriate size and strength of cerclage wire is not universally available in low resource settings.

Methods: We describe a simple technique to make a braided cerclage wire from steel wires.

Conclusions: Our technique is simple, economical, and produces a braided cerclage wire that is stronger than the composite steel wires. The braided cerclage wire can be used in constructs requiring greater resistance to load, such as peri-prosthetic hip fractures, without the added cost of purchasing a specific implant for these challenging cases.

Surgical Tips: How to make a braided cerclage wire

BACKGROUND:

Cerclage is a French word literally meaning hoop as applied to the metal ring encircling a barrel. In medicine, the term is frequently used in Obstetrics as that stitch encircling the cervix, but in Orthopaedics this hoop is usually a metal wire around a bone used to encircle the fragments of a fracture. The use of metal wires in fracture surgery dates back to 1775 but the technique of cerclage using a solid wire secured with a twist was first described in 1933.¹

Cerclage wiring has gained widespread use in orthopaedic surgery to reduce and stabilize fractures, but concerns exist about its effect on the periosteal blood supply as well as the mechanical properties of the construct and its ability to withstand prolonged stress.² With the increase in uncemented total hip arthroplasty and the risk of periprosthetic fractures there is a renewed interest in cerclage technology.³

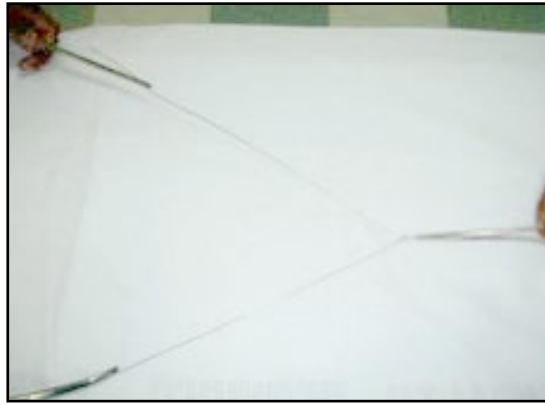


Figure 1:
The starting V-shape of wires

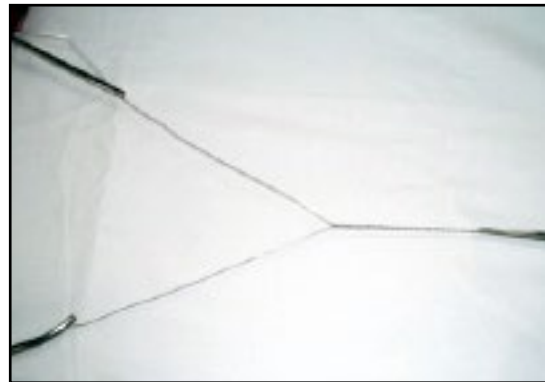


Figure 2:
The Y-shape begins to develop as the wires entwine



Figure 3:
The finished braided cerclage wire with eye

designed a two-wire braided construct that can be created using readily available steel wires with a simple standardized technique. In this report, we describe our technique.

Surgical Technique

The braided cerclage wire is prepared by following the four simple steps below:

1. Select a steel wire twice the length of the anticipated braided wire that will be required.
2. Let an assistant hold both ends apart to form an angle of 90° using a pair of wire holding forceps.
3. The surgeon grasps the wire at its midpoint using a needle nose pliers.
4. Twist the wire while an assistant maintains continuous and uniform tension.

The aim is to produce a pitch of 5mm evenly along the length of the wire. Initially the three points of attachment to the wire form a V shape (figure 1), but as the surgeon continues to twist it acquires a Y-shaped configuration (figure 2) and eventually becomes a straight-braided wire suture that can be used as a cerclage wire (figure 3).

DISCUSSION

Cerclage wires are used in orthopaedic surgery either as a stand-alone implant or in combination with a plate. Common uses include femoral shaft fractures treated by open intramedullary nailing, comminuted patella fractures and periprosthetic hip fractures.⁴ Some surgeons have raised concerns about the ability of cerclage wires to withstand prolonged stress without breakage and also about their effects on periosteal blood supply.

In patients with femoral shaft fractures, cerclage wires allow preliminary reduction of the fracture which facilitates precise location of the entry point and reduces the chance of mal-reduction when the femoral nail is inserted. In these circumstances the cerclage wire must be of sufficient strength to prevent breakage and loss of reduction. Our technique allows the surgeon to rapidly fabricate a strong braided cerclage wire using readily available steel wires. The study by Steinberg et al has shown that the technique of braiding is applicable to wires of 1.0 mm and 1.5 mm diameters, and that a braided construct can withstand higher forces than a single steel wire in a pure tensile test.⁵

In adult reconstructive surgery, cerclage wires may be used in the treatment of peri-prosthetic hip fractures. Cerclage wires restore the ability of the femur to resist hoop stresses during loading of the stem, thereby imparting stability. Single cerclage wires are not strong enough to use under these circumstances and multiple wires have to be used. Alternative methods include a double-loop cerclage which requires two passes of the wire around the bone before being tied. We consider this is a major disadvantage as repeated wire passage increases the risk of injury to nearby neurovascular structures.⁶ The advantage of our technique is that the braided cerclage wire can be used as a single implant, passed only once around the bone. Another advantage is that the surgeon can use fewer braided wires without compromising tensile strength.⁵

A 2004 study by Berend et al.³ looked at the use of either single or multiple cerclage wires or cables in the treatment of intraoperative periprosthetic femoral fractures sustained during uncemented total hip arthroplasty. At a mean follow up of 7.5 years (range 2-16 years), there was 100% survival of the femoral stem with no difference in outcome when any of the fixation methods were used.³ Ritter et al.⁷ studied 249 hips treated with wires or cables and found that there was an increased number of broken wires as compared with cables (11 wires vs 1 cable), but the difference did not reach statistical significance ($p < 0.5373$). The braided cerclage wire is functionally a cable, with its increased strength over single wires one can expect fewer breakages.

Although wire breakage is common, it is rarely reported. Migration of broken wires can however result in serious complications.⁹ Most breakages occur at the innermost twist as this is the area of maximal pretension. Studies have shown that a braided 1.5 mm wire has almost twice the peak load to failure of a single 1.5 mm wire, demonstrating that braided wires are less likely to break and migrate.⁵ To date, using our technique of braided cerclage wire application we have not yet had a case of wire breakage in a series of over 50 cases.

In the United States the cost of cables is approximately 10 times that of Luque wires, prompting some surgeons to report that the use of cerclage wires was more cost effective.⁷ In our setting in the Eastern Caribbean, the cost of a single cable and crimp is approximately \$100.00 US Dollars. We have calculated that the cost to produce a 50 cm length braided cerclage wire from 1.0mm stainless steel wire is roughly \$1.78 US Dollars. The cost of an equivalent, commercially-available cable and crimp is therefore 56 times more expensive than the cost of the braided cerclage wire. We believe that this vast difference in price with no change in the clinical outcome makes the use of a braided cerclage wire inherently more suitable to the resource-poor Caribbean setting.

The strength of cerclage fixation is determined by the knot-twist used to close the loop. Braided wires, particularly those of a larger diameter, are stiffer than single wires and higher forces have to be applied during tightening and twisting.⁸ Poor technique can lead to inadequate knot formation, loss of pretension and early plastic deformation. This has prompted some authors to caution its use in periprosthetic hip fractures.⁶ A successful outcome depends on a secure knot-twist and cannot be compensated by simply increasing the strength of the wires. We therefore emphasize the importance of good knot tying technique when using braided wires. An advantage of the braided wire is the formation of an eye at the end, which allows it to be easily used with an AO (Arbeitsgemeinschaft für Osteosynthesefragen) wire tightener eliminating the risk of poor knot formation.

The effect of cerclage wires on blood flow and bone healing has traditionally been a major concern for surgeons. Many studies that evaluated the effect of cerclage wires on periosteal blood flow have shown that there are no negative consequences since the blood flow through the cortex is centrifugal. Notwithstanding the scientific data some surgeons still believe that the continuous foot print of a single wire may affect bone healing. A study by Steinberg et al.⁵ has shown that the braided cerclage wire produces an interrupted dot imprint on the bone, indicating that the periosteal vascularity is maintained. We suggest that the use of a braided construct is less likely to affect bone healing and may be more applicable in situations of compromised skeletal vascularity.

Prolonged operating time has been linked to increased complication rates.¹⁰ It is vital therefore that the operative procedure be conducted in a coordinated fashion with minimum time delay. The time to produce one straight braided wire ranges between 3-5 minutes from set-up to completion and is easily within the surgical skill set of an average house officer. Our technique is not time consuming and the braided wires can be made by junior members of the surgical team while the major aspects of the operation continue uninterrupted. Additionally, braided wires of different dimensions can be pre-manufactured, sterilized, labelled and stored to be used as needed, further reducing operating time.

CONCLUSION

In a resource-poor setting cerclage wire use is ubiquitous, although the required diameter and strength of wire is often unavailable. The described technique can be readily utilized to produce a braided wire that is at least twice the strength of a single wire, thus extending its applicability. Braided wires can be pre-constructed to various lengths, sterilized and stored so that operating time can be reduced. It is inexpensive, easy to handle and requires no special equipment. The technique is sufficiently simple so it should be universally acceptable to all levels of surgeons.

REFERENCES

1. Evans PE. Cerclage fixation of a fractured humerus in 1775. Fact or fiction? **Clin Orthop Relat Res.** 1983; 174: 138-42.
2. Wilson JW, Rhinelander FW, Stewart CL. Microvascular and histologic effect of circumferential wire on appositional bone growth in immature dogs. **J Orthop Res.** 1985; 3(4): 412-7.
3. Berend KR, Lombardi AV, Jr., Mallory TH, Chonko DJ, Dodds KL, Adams JB. Cerclage wires or cables for the management of intraoperative fracture associated with a cementless, tapered femoral prosthesis: results at 2 to 16 years. **J Arthroplasty.** 2004; 19(7):17-21.
4. Angelini A, Battiato C. Past and present of the use of cerclage wires in orthopedics. **European journal of orthopaedic surgery & traumatology.** 2015; 25(4): 623-35.
5. Steinberg EL, Shavit R. Braided cerclage wires: a biomechanical study. **Injury.** 2011; 42(4): 347-51.
6. Lenz M, Perren SM, Richards RG, Muckley T, Hofmann GO, Gueorguiev B, et al. Biomechanical performance of different cable and wire cerclage configurations. **International orthopaedics.** 2013; 37(1): 125-30.

7. Ritter MA, Lutgring JD, Davis KE, Berend ME, Meding JB. A clinical, radiographic, and cost comparison of cerclage techniques: wires vs cables. **J Arthroplasty.** 2006; 21(7): 1064-7.
8. Wahnert D, Lenz M, Schlegel U, Perren S, Windolf M. Cerclage handling for improved fracture treatment. A biomechanical study on the twisting procedure. **Acta chirurgiae orthopaedicae et traumatologiae Cechoslovaca.** 2011; 78(3): 208-14.
9. Leonardi F, Rivera F. Intravascular migration of a broken cerclage wire into the left heart. **Orthopedics.** 2014; 37(10): 932-5.
10. Cheng H, Clymer JW, Po-Han Chen B, Sadeghirad B, Ferko NC, Cameron CG, et al. Prolonged operative duration is associated with complications: a systematic review and meta-analysis. **J Surg Res.** 2018; 229: 134-44.

ORIGINAL RESEARCH CONTRIBUTION

Teaching Simple Surgical Suturing Skills Through Simulation

Vickita Nandan, Shilindra Rajkumar

Author Details:

Vickita Nandan, MBBS
Medical Officer
Georgetown Public Hospital Corporation, Guyana
Email: amelia_nandan@yahoo.com

Shilindra Rajkumar, MBBS, FCCS
General and Reconstructive Surgeon
Georgetown Public Hospital Corporation, Guyana
Email: shiloraj@gmail.com

ABSTRACT

Background: Medical students contend with limited instructor availability, resources and medico-legal ethics to learn fundamental surgical skills. The purpose of this study was to assess learning of surgical suturing skills to medical students in a simulated environment outside the operating room.

Method: During suturing workshops at the Institute of Health Education in Guyana, 38 medical students were taught suturing skills by workshop faculty. After the training, each instructor observed participants while they performed a standardized suturing task using a specially modified OSATS checklist. Participants scores recorded before and after simulated training were collected and compared using SPSS.

Results: The mean checklist scores increased after completion of training (19 +/-3) compared to pre-training scores (10 +/- 7 vs). At the end of training, participants completed suturing tasks in significantly shorter times (93 +/-32 vs 135 +/- 56 minutes; Mean +/-SD).

Conclusion: Medical students showed improvement in basic surgical suturing skills when trained using this method of simulation. This is a safe, effective and ethical method to teach suturing skill in our setting.

BACKGROUND

Mastering suturing skills is the cornerstone of surgical procedures. Traditionally, there were few formal training sessions for medical students and surgical residents to learn basic surgical skills in our setting. Most learned by

observing and then practicing their skills in clinical settings.¹ This method of training is not sustainable due to scarce operating time, high patient loads, increased trainee numbers and medico-legal implications.² Naturally, there has been an increase in simulation-based learning across the globe.

Simulated training refers to the artificial representation of a real-world process to achieve educational goals via experimental learning.³ Surgical simulators originated over 2,500 years ago. One of the first recorded instances of surgical simulation was the use of leaf and clay models in India around 600 B.C. to conceptualize nasal reconstruction with a forehead flap.⁴ Other examples of simulators used for surgical training include bench-top models, live animals, human cadavers, mannequins, virtual reality simulations, robotic surgical simulator and 3D rapid prototyping.^{5,6} Surgical simulations provide an opportunity for trainees to learn and to be objectively assessed. They aid in the development of critical psychomotor, technical and judgment skills by providing repeated practice in a safe setting. In the long term, simulations reduce operative times, lower complication rates and improve patient outcomes.⁷

We sought to evaluate trainee competence in surgical suturing before and after simulated teaching exercises.

METHODS:

During suturing workshops held at the Institute of Health Education in Guyana, 38 medical students were taught surgical suturing skills. These workshop participants were informed about the study and gave oral consent to participate. We secured an exemption from the local institutional review board to carry out this study.

We devised a detailed checklist to evaluate participants (appendix 1). Our checklist was a modification of the OSATS (Objective Structured Assessment of Technical Skills) checklist published by Alam et al ⁸ in which we added a score for each step: Not done = 0; Some Knowledge of step = 1; Correctly done = 2. The maximum score that a participant could attain was 26. Maximum proficiency was defined as completing a simple suture in thirty seconds or less, without any errors.

The modified 13-step checklist was provided to all faculty members, who were responsible for observing and scoring each participant before and after training. A pair of students were randomly assigned to each instructor. Each instructor taught the participants suturing skills. The participants were given 20 minutes to practice the technique. After practice, each student was provided with standardized instruments, sutures and a suture model. Each participant was asked to place a simple suture in an incision on the model. The students were observed and scored by their instructor. Total time to complete the suture was also recorded.

The data was collected and analyzed using Statistical Package for Social Sciences (SPSS) version 23. Descriptive analysis was used to evaluate performance and demonstrate the characteristics of the study sample.

RESULTS

No participant was able to achieve maximum proficiency. However, there was statistically significant improvement in participants’ mean training scores after completing training (table 1).

| Table I: Comparison of Pre- training and post- training Scores | | | | | | |
|--|---------------|-------------------|---------|----------|--------|----------|
| | Mean Score | Std. Deviation | Range | Kurtosis | Median | Skewness |
| Pre training score | 9.97 | 6.647 | 0 - 22 | -1.399 | 9.00 | 0.099 |
| Post training score | 19.37 | 2.898 | 15 - 24 | -1.058 | 19.50 | 0.076 |

There was also a reduction in the duration of time for participants to complete a single suture from 137 seconds to 93 seconds after training was completed (table 2). While all the data is positively skewed, the skewness of the pre-training, post-training scores and the post-training time ranges between -0.5 and 0.5 suggesting that the data are fairly symmetrical. However, the pre-training time skewness falls between 0.5 and 1 suggesting the data is moderately skewed.

| Table II: Comparison of Pre- training and post- training Time | | | | | | |
|---|---------------------------|-------------------|----------|----------|--------|----------|
| | Mean Time (seconds) | Std. Deviation | Range | Kurtosis | Median | Skewness |
| Pre training time | 136.84 | 52.993 | 60 - 255 | --0.678 | 124.00 | 0.583 |
| Post training time | 93.34 | 32.285 | 34 - 160 | -0.265 | 92.50 | 0.247 |

Table III shows a comparison of each item on the checklist before and after training. There was significant increase in the students’ abilities to load needle driver, evert tissue edge, piercing the tissue, completing the first knot and carrying out the second and third knots and cutting the suture to leave a 1cm tail. Overall, 79% of students scored ≤50% before training. After training, this reduced to 20% of students achieving <50% scores, with the lowest post-training score being 44%.

Safety

| Table III: Skill level comparison pre-training and post-training | | | | |
|--|-------------------------------|----------------|--------------------|----------------|
| | Percentage of Students (n=38) | | | |
| | Pre- training | | Post training | |
| Skill | Not done correctly | Done Correctly | Not done correctly | Done Correctly |
| Load Needle Driver | 71 | 29 | 45 | 55 |
| Evert first edge | 71 | 29 | 8 | 92 |
| Pierce first side | 68 | 32 | 18 | 82 |
| Pass through | 68 | 32 | 53 | 47 |
| Reload | 87 | 13 | 61 | 39 |
| Pierce second side | 71 | 29 | 11 | 89 |
| Pass through | 87 | 13 | 45 | 55 |
| Start first knot | 87 | 13 | 37 | 63 |
| Finish first knot | 82 | 18 | 26 | 74 |
| Tie second knot | 87 | 13 | 24 | 76 |
| Tie third knot | 87 | 13 | 21 | 79 |
| Cut leaving 1cm | 71 | 29 | 26 | 74 |
| Timing | 100 | 0 | 100 | 0 |

outcomes were not formally recorded. However, no injuries were reported by the instructors or observers during the study.

DISCUSSION:

The role of simulation-based education is well established.^{9,10} The results of this study contribute to the data suggesting that simulation workshops have positive outcomes. Medical students are given a controlled setting to practice and have real-time feedback.

The OSATS were first used by University of Toronto in the 1990s and later became a validated tool for the evaluation of surgical training. This checklist approach helps instructors to see the area in which a student requires more practice. Using this method, we identified loading needle holders, securing the third knot were identified as weak areas pre-training. We recognize that there may be bias introduced if the instructors are privy to the pre-training scores.

We find the results of this study encouraging and believe that a larger, prospective study should be performed to assess the number of practice sessions and optimal time to achieve competence. We believe, based on the results of this study, that simulation-based teaching can be incorporated into the Guyana Medical Education system.

We acknowledge that there were limitations to this study. Firstly, an assumption is made that all faculty were familiar with the checklists. Secondly, there is the potential for instructors to be biased in recording data or errors in the use of measurement devices. Also the sample size for this study was small reducing the power of the study.

CONCLUSIONS:

Basic surgical skills should be taught to all medical student through simulation. Future studies are needed to identify the optimal teaching schedule for retention of skill and to investigate the effects of self-directed or prescribed practice schedules.

REFERENCES:

1. Torkington J, Smith SG, Rees BI, Darzi A. The role of simulation in surgical training. **Annals of The Royal College of Surgeons of England**. 2000; 82: 88–94.
2. Denadai R, Toledo AP, Martinhão Souto LR. Basic plastic surgery skills training program on inanimate bench models during medical graduation. **Plast Surg Int**. 2012; 651863.
3. Limberg AA. The Planning of Local Plastic Operations on the Body Surface: Theory and Practice. Lexington, Mass.: DC Heath and Company; 1984.
4. Flangan B, Nestel D, Joseph M. Making patient safety the focus: Crisis resorce management in the undergraduate curriculum. **Med Edu**. 2004; 38: 56–66.
5. Khunger N, Kathuria S. Mastering surgical skills through simulation-based learning: Practice makes one perfect. **Journal of Cutaneous and Aesthetic Surgery**. 2016; 9(1): 27.
6. Ghazi A, Stone J, Candela B, Richards M, Joseph J. V9-10 Simulated inanimate model for physical learning experience (simple) for robotic partial nephrectomy using a 3-d printed kidney model. **Journal of Urology**. 2015; 193(4s).
7. Zevin B, Aggarwal R, Grantcharov TP. Surgical simulation in 2013: why is it still not the standard in surgical training? **J Am Coll Surg**. 2014; 218: 294-301.
8. Alam M, Nodzenski M, yoo S, Poon E, Bolotin D. Objective structured assessment of technical skills in elliptical excision repair of senior dermatology residents: a multirater, blinded study of operating room video recordings. **JAMA Dermatol**. 2014; 150 (6): 608-12.
9. Routt E, Mansouri Y, de Moll E, Bernstein D, Bernardo S, Levitt J. Teaching the Simple Suture to Medical Students for Long-term Retention of Skill. **JAMA Dermatology**. 2015; 151(7): 761.
10. Rosen JM, Long SA, McGrath DM, Greer SE. Simulation in plastic surgery training and education: the path forward. **Plastic and Reconstructive Surgery**. 2009; 123(2): 729-740.

Appendix I: Simple Suture Scoring Rubric (Adapted from Alam et al)

Participant ID:

Date:

| Step | Description | Score | | |
|--------------------|---|--------------|------------------------------------|--------------------|
| | | Not Done (0) | Demonstrated Knowledge of Step (1) | Done Correctly (2) |
| Load needle driver | Grasp out of packet on location appropriate for suturing (with more than half of the needle ahead of the driver) with palm down | | | |
| Evert first edge | Evert skin edge with forceps using nondominant hand (pencil grip) | | | |
| Pierce first side | Palm down. Enter skin with needle perpendicular to skin and rotate to drive through | | | |
| Pass through | Release needle, regrasp in wound palm down, and rotate through | | | |
| Reload | Hand needle to opposite hand from blunt end with needle facing away from palm of hand (can be done with forceps instead of hand to save time); reload needle on driver with palm up, grasping ahead of fingers | | | |
| Pierce second side | Evert opposite skin edge from wound side, enter skin palm down and rotate through to pierce skin | | | |
| Pass through | Release needle, regrasp in wound palm down, and rotate to continue advancing needle; hand off to opposite manner as in step 5 | | | |
| Start first knot | With minimal advancement of suture, wrap suture around tip of needle driver two times; place needle driver tip on thumb, move both hands together to advance suture, leave 1cm suture for instrument tie; move both hands together to grasp free end of suture, keep dominant hand still; pull with non-dominant hand | | | |
| Spool | Spool excess suture with nondominant hand around fifth digit, rotating toward body to take tension off needle | | | |
| Finish first knot | Apply tension to suture and rotate suture end 180° to achieve square knot (check visually); pull tight to close and avoid puckering skin | | | |
| Tie second knot | Needle driver points away from body; move into string and twist wrist to wrap one time around | | | |

| | | | | |
|----------------|---|--|--|--|
| | driver; grasp free end of suture, check fro square knot; rotate ends of suture 180° | | | |
| Tie third knot | Repeat step 11 again | | | |
| Cut | Cut excess suture, leaving 1cm on each side | | | |
| Timing | Entire process completed under 30seconds without errors | | | |

Time taken: _____ (minutes and seconds)

ORIGINAL RESEARCH CONTRIBUTION

First Video Assisted Thoracoscopic Surgery Anatomical Lung Resection in The English Speaking Caribbean

Matthew Lyew, Patrice A Pinkney, Rory Thompson

Author Details:

Matthew Lyew
Department of Surgery
University of the West Indies, Mona
Kingston 7. Jamaica

Patrice A. Pinkney
Department of Surgery
University of the West Indies, Mona
Kingston 7. Jamaica
Email: patriceapinkney@gmail.com

Rory Thompson
Department of Pathology
University of the West Indies, Mona
Kingston 7. Jamaica

ABSTRACT

Background: Many primary thoracic surgical conditions are amenable to minimal invasive techniques. These are readily accessible across the Caribbean, have several clinical benefits, yet remain infrequently utilized.

Report of Case: We present the case of a young patient found to have a right lower lobe complex cystic lesion who underwent successful minimally invasive anatomical thoracoscopic resection – a novelty procedure in the Caribbean.

Conclusions: Video Assisted Thoracic Surgery (VATS) is available in the Caribbean and represents a viable and preferable treatment option for primary thoracic surgical conditions. Although cost presents a major hurdle, increasing institutional support and surgical training is needed prior to commonplace use of VATS and other minimally invasive thoracic techniques.

INTRODUCTION

Although minimally invasive techniques are readily accessible across the Caribbean, they remain infrequently utilized to treat thoracic surgical conditions. In this paper, were present a case where a complex lung lesion was removed using Video Assisted Thoracic Surgery (VATS). There is increasing institutional support for VATS, but appropriate surgical training is needed prior to its use.

CASE REPORT

A 15-year-old non-smoker was referred to the thoracic surgery clinic with a history of intermittent right-sided chest pain that worsened acutely one week prior to presentation. He denied any respiratory complaints and constitutional symptoms. His history and examination were otherwise unremarkable. A plain chest radiograph (figure 1) and CT scan (figures 2-4) demonstrated a complex cystic lesion, abutting the diaphragm and posterior pleura with no solid components, no chest wall invasion, no calcifications nor mediastinal lymphadenopathy.



Figure 1: Erect chest radiograph showing right lower lobe bullous lesion

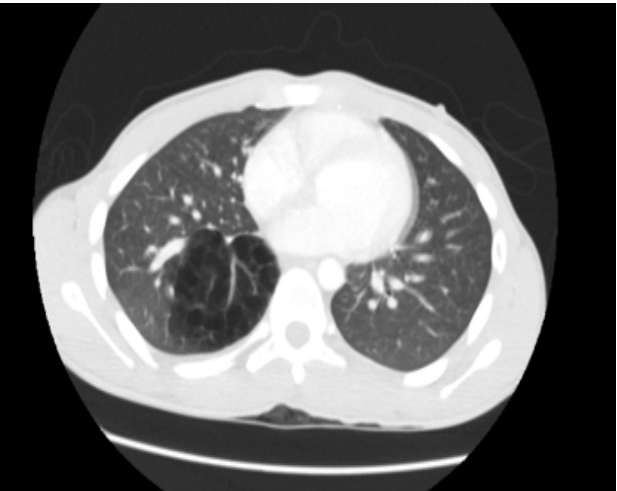


Figure 2: Axial CT view showing apical aspect of right lower lobe lesion

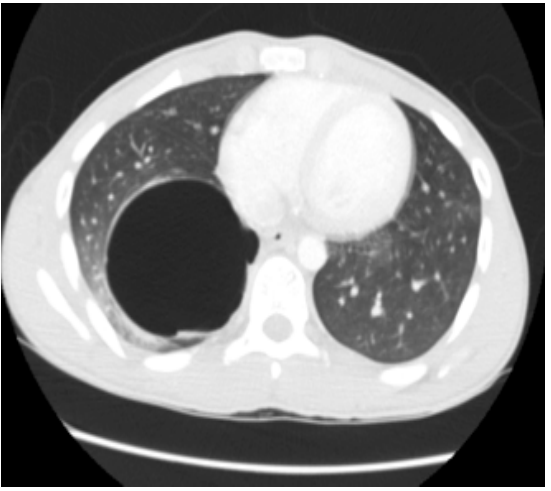


Figure 3: Axial CT view showing basal aspect of right lower lobe lesion

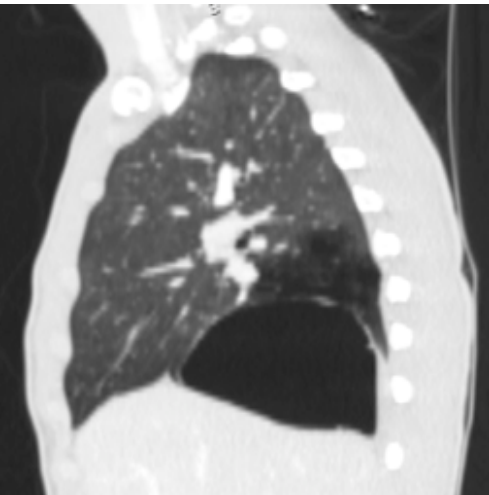


Figure 4: Sagittal CT section showing relation with diaphragm

A VATS lobectomy was performed using port sites and access incisions as outlined in figure 5. Figures 6 and 7 demonstrate the thoracoscopic view of the lesion (figure 6) and the operative field after anatomical resection (figure 7). The procedure was uneventful and he was discharged on the third post-operative day.



Figure 5: Port sites and access incision arrangement

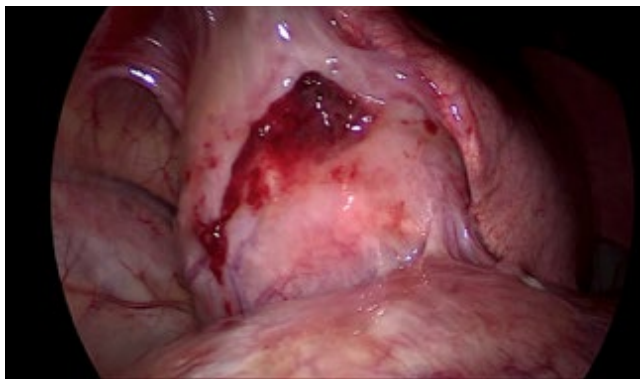


Figure 6: Intra-Operative view of right lower lobe lesion

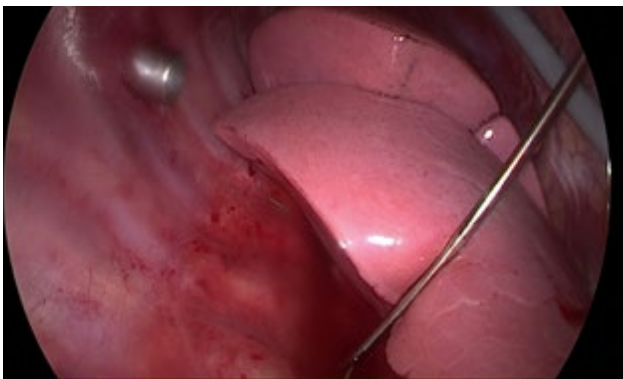


Figure 7: Completed anatomical resection of right lower lobe

Gross Pathology

The right lower lobectomy specimen measured 12.5 x 9.1 x 7.6 cm and weighed 161 grams (figure 8). The parietal pleura was smooth except for the diaphragmatic surface which demonstrated an irregular, haemorrhagic 3.5 x 1.4 x 1.2 cm area. The bronchial and vascular surgical margins were both stapled flush with the parenchymal margin.



Figure 8: Gross specimen of right lower lobe

Sectioning revealed a 7.6 cm unilocular empty cyst (figure 9) within the lowermost aspect of the resection intimately associated with previously mentioned haemorrhagic area. The cyst wall was of a maximum mural thickness of 0.1 cm and the lesion came to within 1.2 cm of the bronchial resection margin, 1.5 cm of the vascular resection margin and 0.1cm of the pleural surface. The remaining lung parenchyma had an unremarkable brown cut surface. Three hilar lymph nodes were identified.



Figure 9: Sectioned specimen of cystic lower lobe lesion

Microscopy revealed that the lesion was multi-cystic where the cyst described macroscopically was surrounded by smaller cystic structures. The cysts were lined by respiratory type epithelium evidenced by tall columnar pseudostratified cells with cilia, however, goblet cells were inconspicuous. The walls of the cysts were composed of loose fibroconnective tissue with elastic fibres, blood vessels, smooth muscle bundles and inflammatory cells inclusive of foreign body giant cells. The cyst cavities contained inflammatory cells and foamy macrophages. Multifocal osseous metaplasia was present throughout, especially in the areas of reparative fibrosis. No malignant mesenchymal cells were identified.

These features are those of congenital acinar dysplasia/cystic pulmonary airway malformation (CPAM) type 1 and the lesion was completely excised. The uninvolved lung displayed vascular congestion, stromal haemorrhage and mucin plugs in some bronchioles. The lymph nodes showed reactive changes and deposition of anthracotic pigment.

DISCUSSION

The volume of minimally invasive surgical (MIS) approaches continues to increase, supported by the well-documented benefits in the medical literature.¹ Indeed, MIS approaches have become the standard of care in several surgical conditions.¹

With greater case volumes, training simulators and other educational adjuncts more surgeons and surgical trainees are accruing proficiency in MIS.² The development of more ergonomic instruments, higher quality optics and a wide array of energy devices has made the intra-operative experience – visualisation, safety, speed and reproducibility, equivalent if not superior to open surgery even for the most technically challenging procedures.³ These advantages are particularly pronounced in anatomical regions with limited operative space such as the thorax. With the success of laparoscopic procedures, the same principles have been applied to thoracic surgery procedures worldwide.⁴

Unfortunately, within our diaspora MIS continues to be used with great disparity most frequently in abdominal operations. The adaptation, innovation and implementation of MIS techniques that have spanned a wide range of specialties in developed countries have not yet translated to those of the developing world and the Caribbean.

Accordingly, the progress of thoracoscopy within the Caribbean has been sluggish in comparison to its laparoscopic counterpart.

Consider the fact that the first report of an open cholecystectomy was in 1882 and the first cholecystectomy competed laparoscopically was performed in 1985.⁵ The first laparoscopic cholecystectomy in the Caribbean was performed a mere 6 years later in 1991.⁶

In comparison, the first report of lung resection for tumour was reported in 1861,⁷ and similarly to cholecystectomy, the first MIS equivalent (VATS lobectomy) was reported in 1992.⁸ However, the Caribbean’s index case at our institution in 2019 represents a 27-year delay. This is a harrowing indication of the slowness of the Caribbean to adopt VATS and other MIS thoracic procedures into standard practice.

Smith et al examined the evolution of VATS in the Caribbean outlined the barriers to its widespread implementation across the region.⁹ One reason is that the investment of time and resources into MIS training is disproportionately focused towards general surgery, urology and gynaecology. This is most likely due to the gross under appreciation of the incidence of thoracic disease amenable to MIS methods.¹⁰

Additionally, the ubiquitous challenge of finances has been explored. Disposables account for the majority of the expense in MIS, but this has been shown to be offset by reduced length of hospital stay and less post-operative complications.¹¹ Disappointingly, these disposables remain mostly unavailable in the public health care setting, further underlining the lack of support for and/or knowledge about MIS thoracic surgery in the local setting.

CONCLUSION:

To the best of our knowledge, this is the first report of a thoracoscopic anatomic pneumonectomy in the Caribbean. We hope that this landmark procedure serves as an instigator for more institutional and government support of thoracoscopic techniques and accordingly more enthusiasm towards there implementation by surgeons within the Caribbean.

REFERENCES:

1. National Institutes of Health. Gallstones and Laparoscopic Cholecystectomy. **NIH Consensus Statement**. 1992; 10(3): 1-20.
2. Parker M, Ramdass MJ, Cawich SO, FaSiOen P, Rosin D. A historical perspective on the introduction of laparoscopic basic surgical training in the Caribbean and factors that contribute to sustainability of such training. **International Journal of Surgery**. 2019; 72: 6–12.
3. Coppola A, Stauffer JA, Asbun HJ. Laparoscopic pancreatoduodenectomy: current status and future directions. **Updates in Surgery**. 2016; 68(3): 217–224.
4. Kittle C. The history of lobectomy and segmentectomy including sleeve resection. Chest surgery clinics of **North America**. 2000; 10: 105-30.
5. Reynolds W Jr. The first laparoscopic cholecystectomy. **JSLS**. 2001; 5(1): 89–94.
6. Cawich SO, Kabiye D. Developing Laparoscopic Surgery on the Caribbean Island of St. Lucia: A Model for Public-Private Partnerships. **Cureus**. 2019; 11(10): 6011.
7. Jacobaeus HC. “Ueber die möglichkeit die zystoskopie bei untersuchung seroser Honlungen anzuwenden,” **Münchener Medizinische Wochenschrift**. 1910; 57: 2090–2092.
8. Herrmann D, Hecker E. 25 Years of Video-Assisted Thoracoscopic Surgery for Lobectomy in Early-Stage Lung Cancer: A Review. **Clin Surg**. 2017; 2: 1611.
9. Smith A, Ramnarine I, Pinkney P. Evolution of Video Assisted Thoracoscopic Surgery in the Caribbean. **International Journal of Surgery**. 2019; 72: 19–22.
10. American Thoracic Society. Management of Malignant Pleural Effusions. **American Journal of Respiratory and Critical Care Medicine**. 2000; 162(5): 1987–2001.
11. Burfeind WR Jr, Jaik NP, Villamizar N, Toloza EM, Harpole DH Jr, D’Amico TA. A cost-minimisation analysis of lobectomy: thoracoscopic versus posterolateral thoracotomy. **European Journal of Cardio-Thoracic Surgery**. 2010; 37(4): 827–832.

TECHNICAL REPORT: HOW I DO IT

Modified Jejunostomy Feeding Tube

Robbie A Rampersad, Sanjeev Solomon, David Richards, Vijay Naraynsingh

Author Details:

Robbie A Rampersad, MBBS, DM

Consultant Radiologist
Medical Associates Hospital, St Joseph
Trinidad & Tobago
Email: Robbie.rampersad@gmail.com

Sanjeev Solomon, MBBS, DM

Consultant Gastroenterologist
Medical Associates Hospital, St Joseph
Trinidad & Tobago

David Richards, MBBS, DM

Medical Associates Hospital, St Joseph
Trinidad & Tobago

Vijay Naraynsingh, MBBS, FRCS, FCCS

Professor of Surgery
Medical Associates Hospital, St. Joseph
Trinidad & Tobago
Email: vnarayn@gmail.com

Dear Editor,

We wish to highlight a clinical problem that may be encountered by our colleagues in the West Indies when jejunostomy tube exchange is required. We present a modified technique using simple equipment that is available in the operating room.

REPORT OF A CASE:

A 62 year-old man had surgery for distal oesophageal carcinoma 3 years prior to presentation and had a feeding jejunostomy placed at that time in the United States of America. He lived in Trinidad & Tobago but traveled to the U.S.A. regularly for treatment and had the tube changed there on two occasions. Due to COVID-related travel restrictions, he could not travel but now required a jejunostomy tube change because of intermittent blockage.



Figure 1: The specially-designed jejunostomy tube with balloon, feeding channels and open tip

The 14 Fr Silastic tube had been placed over a guide wire and was specifically designed for that purpose (figure 1). No such tube was available in Trinidad & Tobago, so the available options to utilize as replacement tubes were:

1. Suction catheter - but the wide lumen at the tip would not fit snugly over the guide wire and was not likely to slide smoothly along the tract
2. Naso-gastric tube - but the tip would be quite wide relative to the guide wire
3. Infant feeding tube - but the tip was sealed and if cut, it would be wider than the guidewire.
4. Foley catheter - this had an advantage of having a self-retaining balloon but the tip is sealed and would still have an unmatched fit over the guide wire if it were cut

The decision was made to use a 14 Fr Foley catheter, but instead of amputating the smooth, olive-shaped tip, we decided to trim it enough to permit easy puncture and maintain a rounded tip to facilitate passage through the jejunostomy tract. We present our technique.

TECHNIQUE:

A small piece from the tip of a 14 Fr Silastic Foley catheter was sharply cut, leaving the rest of the 'olive-tip' intact. This blind end was then perforated by using a 18G needle made red hot by a naked flame (figure 2).

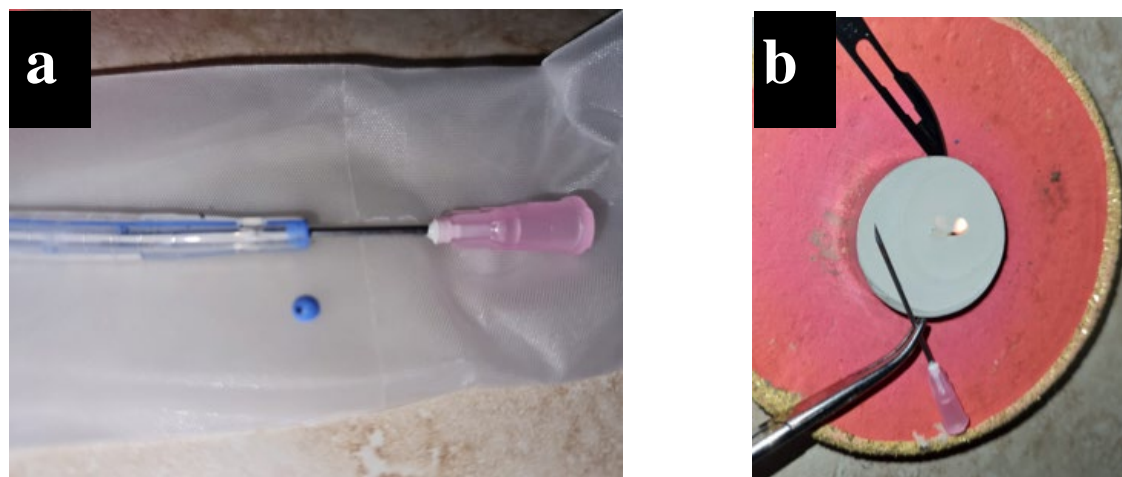


Figure 2: The smooth tip of the Foley catheter was amputated and a needle heated over an open flame was used to perforate the tip of the Foley.

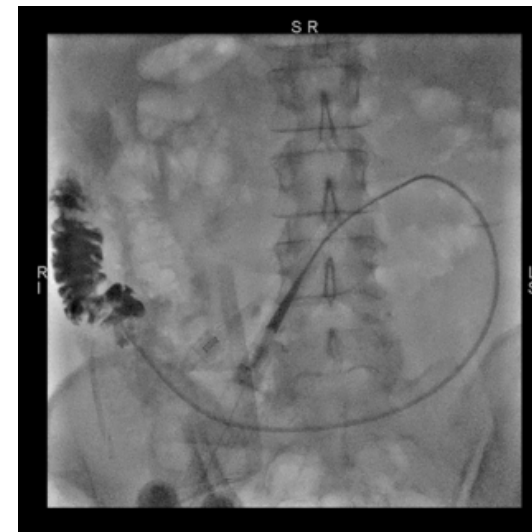


Figure 3: Contrast is injected into the foley catheter in order to confirm proper placement.

After making the initial perforation, the needle was reheated and passed a few times to ensure that the edges of the hole were smooth. The needle was held by an artery forceps as it was extremely hot during this process. The guide wire was passed through the newly created perforation to ensure that it slid freely through the Foley catheter.

The rest of the process was routine. The guide wire was passed through the tube into the jejunum, the old tube was removed and the new modified-Foley jejunostomy tube passed over the guide wire. Contrast fluoroscopy was used to ensure proper placement. The guidewire was then removed and the cuff inflated (figure 3).

We wish to report this technique because it may be of value to other practitioners when a jejunostomy tube change is required, but the ideal 'designer' tube is unavailable. We have used it in three patients and we have found it to be an inexpensive and effective technique that is ideally suited to surgeons who work in limited-resource settings.

Stop Ignoring the Elephant in the Room

There are dangers in Surgical Smoke Plume
Together, we can help eliminate them



Take the next step toward a safer OR for your staff and your patients
by visiting CONMED.com/MyHealthyOR

For more information contact **A.A. Laquis at**
enquiries@aalakis.com or T&T Toll Free 800-4225

The **LEADER** in Surgical Smoke Management
Surgical Smoke Pencils • Smoke Evacuators • Laparoscopic



ORIGINAL ARTICLE:

Women in Surgery: A Caribbean Perspective

Barbara Rampersad

Author Details:

Barbara Rampersad, FCCS
Eric Williams Medical Sciences Complex
Trinidad & Tobago
Email: psurgtnt@gmail.com

ABSTRACT:

Background: Surgery in the Caribbean has been male dominated for decades. In an attempt to achieve equity, we sought to determine the proportion of surgeons in active practice in the Caribbean who were women.

Methods: We performed a retrospective audit of the register of all surgeons in the English-Speaking Caribbean maintained by the Caribbean College of Surgeons. Each surgeons' gender and demographic details were recorded. When the gender was not listed, the contact details listed in the register were used to contact individual surgeons to ascertain gender.

Results: Of a total of 175 fully qualified surgeons in clinical practice registered across 17 English-speaking countries in the Caribbean, there were 20 (11.4%) female surgeons practicing in the following specialties: general surgery (12), paediatric surgery (3), urology (3), orthopaedics (2).

Conclusions: There is still inequity for female surgeons in the Caribbean. The Women in Surgery Chapter of the Caribbean College of Surgeons is the first step to achieve equity and it highlights the need for fundamental change. It is important that the profession continues to work to remove these barriers as it will result in long-lasting social change

INTRODUCTION:

Surgery in the Caribbean has been male dominated for decades, but this is slowly changing. In the year 2018, women made up only 13.2% of all surgeons in the United Kingdom [1] and only 19.2% of surgeons in the United States of America [2]. We sought to determine the proportion of female surgeons in clinical practice in the Caribbean. This was performed by an audit of the Caribbean College of Surgeons, a professional association of all qualified surgeons in clinical practice across the Caribbean region [3].

METHODS:

Approval for this audit was secured from the Caribbean College of Surgeons Ethical Standards Committee. The CCOS register was retrospectively reviewed and the surgeons' demographic details were extracted. When the gender was not listed, the contact details listed in the CCOS register were used to contact individual surgeons to ascertain gender.

We excluded individuals when their demographic data were ambiguous and/or the individual surgeons could not be contacted using the available details.

RESULTS:

There were 175 fully qualified surgeons in clinical practice registered across 17 English-speaking countries in the Caribbean. There were 20 (11.4%) female surgeons and 155 (88.6%) males. The female surgeons were practicing in the following specialties: general surgery (12), paediatric surgery (3), urology (3), orthopaedics (2).

DISCUSSION:

It is clear that women are under-represented in the Caribbean (11.4%) and in the surgical specialties across the globe [1-3], although there has been slow change in the Caribbean over the past two decades [4]. Consider the fact that the University of the West Indies (UWI) is one of the major universities offering training in medical sciences and serving the English-speaking Caribbean [5] and the fact that more than 65% of 2020 UWI graduating class were females. Therefore, it is reasonable to expect that more females will be embarking on training in all specialties in the near future.

Since we expect the proportion of female Caribbean surgeons to increase in the near future, the profession should plan to support these colleagues. This is not to suggest that there should be special treatment or privileges for women in surgery, but at the very least they deserve an equal opportunity to train in and to practice surgery. To achieve this, it is important for us to identify obstacles that women face when they choose a career path in surgery.

First, we must acknowledge that many women who are interested in surgery still face discrimination in the 21st century [2,6]. This occurs at many levels: within medical schools [1,2], during post-graduate training programmes [3], in appointments to consultancy posts [6] and in appointments to departmental chair levels [7]. We acknowledge that there has been progress since the 19th century, when Dr. James Barry had to pretend to be a man during her entire career in order to practice surgery [8]. But the fact that discrimination continues in the 21st century is unacceptable.

Secondly, most junior doctors who choose a career path are influenced by mentors in their chosen field [9]. This is important for women who choose surgery because achieving a life-work balance is more challenging than it is for men who have traditionally had less care-giving responsibilities in family life [2,8]. The presence of a female surgeon role model / mentor who

has achieved that life-work balance is an invaluable motivator for young surgeons who may be interested in training in surgery.

There is also the perception that surgery is a demanding career and that it is impossible to be dedicated to a career in surgery and simultaneously start a family and have children [8]. Many women, therefore, are actively discouraged by their peers and family from pursuing a surgical career [2]. DeCosta et al [2] used the term “*gendered perception*” to describe this bias and made the point that when women ignore this advice, their family / partner support networks are withdrawn, whether consciously or not. But there is no evidence that women cannot perform in a surgical career or that their performance is in any way inferior to that of male surgeons. Women have been shown to perform equally well as males in knowledge, communication, professionalism, judgement and skill [2,8,10,11,12].

Fourthly, young doctors who may be considering a career in surgery do look to existing women surgeons and they do appreciate the subtle biases. The fact that there are no women professors in surgery in the Caribbean and only few female consultants in the Caribbean is a major discouragement for young doctors. Although subtle, the discrimination is undeniable. This is not a Caribbean phenomenon only. In the United States, women only accounted for 8% of professors of surgery, 13% of associate professors in surgery and 19.2% of consultant surgeons [2]. However, we have shown that the figures in the Caribbean were even lower with no women as full or associate professors of surgery and only 11.4% of consultant surgeons.

A recent report revealed that many persons still perceive the presence of a “glass ceiling” for women in surgery in the Caribbean [4]. This resulted in many female surgeons reporting that they did not achieve personal satisfaction from their career choice in surgery [4]. Personal experiences and reports from colleagues can give some insight into this. Many female surgeons in the Caribbean do not feel respected by their seniors. A common example is when senior colleagues make sexist jokes on public platforms and at national and regional meetings, and it seems acceptable to many. They also report a lack of respect from clinical support staff and patients. For example, it is not uncommon for a female surgeon to be addressed as “*nurse*” by patients and support staff. Even in the scenario of training in surgery, women applicants are sometimes questioned about their desire to start a family and this gives the impression that it may affect their opportunities. And, although the UWI has guidelines for dealing with sexual harassment, female residents are reluctant to address this and need to be encouraged to report issues.

In summary, there are many detractors that may push women away from a surgery career path: unavailability of mentors, less opportunity for career advancement, “gendered perceptions” and lack of social support networks. A review of the current residents in training programmes in surgical specialties at UWI demonstrate increasing numbers of female trainee surgeons. Hence, it is imperative that we prepare for this by removing these barriers and provide support for aspiring female surgeons.

Calderon et al [4] published the results of a questionnaire study in 2019 and revealed that 70% of female surgeons in the Caribbean had no active mentor relationships and 88% thought this would be beneficial to their career advancement. Prompted by these results, we recognized the need for

a support group and pioneered the formation of an informal Women in Surgery Group. We approached the leadership of the CCOS, who supported the movement. In 2019 at the Annual Clinical Symposium of the CCOS in Georgetown Guyana, 27 female surgeons and residents met and formalized the Women in Surgery chapter of the Caribbean College of Surgeons (figure 1).



Figure 1: The Women in Surgery Group at its inaugural meeting at the Caribbean College of Surgeons Annual Clinical Symposium in Georgetown Guyana. From left to right: Front row: Barbara Rampersad (Trinidad), Ayana Crichlow (Barbados), Vonetta George (Antigua) and Tanya Hamilton-Johns (Jamaica). In the middle row: Marisa Seepersaud (Guyana), Bibi Hoaein (Guyana), Krista Nottage (Bahamas), Ardene Nicholas (Trinidad), Shanta Baijoo (Trinidad), Delicia Bodie (Bahamas), Cidi Dubay (Trinidad), Aneela Shah (Trinidad), Amelia Shoogoon (Trinidad). In the back row: Shirvanie Persaud (Trinidad), Diannne Narine (Guyana), Kemba Peters (Jamaica), Notoya Fraser (Guyana), Alyssa Muddeen (Trinidad), Sarah Dial (Trinidad), Rohini Patron (Trinidad), Diana Persaud (Trinidad), Vasha Ramgobin (Trinidad), Samara Hassranah (Trinidad), Latoya Outridge (Guyana)

The Women in Surgery Group recognized that there are many challenges for female surgeons and sought to offer support to female residents in training. Currently, the group meets regularly at CCOS meetings and have started a Whatsapp group that incorporates 81 females at various levels in surgical disciplines from across the Caribbean. The group comprises consultants and residents providing mentorship, support and educational resources for members. This is a first step toward achieving equity for women in the surgical disciplines across the Caribbean.

CONCLUSIONS:

There is still inequity for female surgeons in the Caribbean. Only when female surgeons are given the respect of their colleagues, can we expect others to follow. The Women in Surgery Chapter of the Caribbean College of Surgeons is the first step in this process and it highlights the need for fundamental change. It is important that the profession continues to work to remove these barriers as it will result in long-lasting social change.

REFERENCES:

1. National Health Services Digital. Women in Surgery. **Journal of the Royal College of Surgeons in England**. 2020 [Available online at: <https://www.rcseng.ac.uk/careers-in-surgery/women-in-surgery/statistics/>]

2. DeCosta J, Chen-Xu K, Bentounsi Z, Vervoort D. Women in surgery: Challenges and opportunities. **International Journal of Surgery Global Health**. 2018; 1(1): 2-4.

3. Cawich SO. The Caribbean College of Surgeons. An Overview. **Journal of the Caribbean College of Surgeons**. 2019; 2: 3.

4. Calderon C, Maraj A, Roopnarine C, Crichlow J. Women in Surgery Questionnaire: The Caribbean Perspective. **Journal of the Caribbean College of Surgeons**. 2019; 2: 28-29.

5. Eldemire-Shearer, Roberts S. Doctor of Medicine Training – Reflections on the UWI. **West Indian Medical Journal**. 2008; 57(6): 634-638.

6. Sutton PA, Mason J, Vimalachandran D, et al. Attitudes, motivators, and barriers to a career in surgery: a national study of UK undergraduate medical students. **Journal of Surgical Education**. 2014;71:662–7.

7. Epstein NE. Discrimination against female surgeons is still alive: Where are the full professorships and chairs of departments? **Surg Neurol Int** 2017;8:93.

8. Wirtzfeld DA. The history of women in surgery. **Canadian Journal of Surgery**. 2009;52:317–20.

9. Cawich SO, Johnson PB, Dan D, Naraynsingh V. Surgical Leadership in the Time of Significant Generational Diversity. **Surgeon: Journal of the Royal Colleges of Surgeons of Edinburgh and Ireland**. 2014. 12: 235-236.

10. Thomas W. Teaching and assessing surgical competence. **Annals of the Royal College of Surgery in England**. 2006;88:429–32

11. Pico K, et al. Do men outperform women during orthopaedic residency training? **Clin Orthop Relat Res** 2010; 468: 1804–8.

12. Wallis CJ, Ravi B, Coburn N, et al. Comparison of postoperative outcomes among patients treated by male and female surgeons: a population based matched cohort study. **British Medical Journal**. 2017;359:j4366

REVIEW ARTICLE

Evolution of Liver and Pancreas Surgical Sub-Specialty in the Caribbean: Caribbean Chapter of the Americas Hepatopancreatobiliary Association

Wesley Francis, Ammiel Arra, Kimon O. Bonadie, Shamir O. Cawich

Author Details:

Wesley Francis, MBBS, FACS, FCCS

Princess Margaret Hospital
The Bahamas
Email: wesley.francis@gmail.com

Ammiel Arra, MBBS, DM, FCCS

San Fernando General Hospital
Trinidad & Tobago
Email: ammiel_arra@hotmail.com

Kimon O Bonadie, MBBS, DM, FCCS

Cayman Islands Health Service Authority
Grand Cayman
Email: docjabon@hotmail.com

Shamir Cawich, MBBS, DM, FCCS

Port of Spain General Hospital
Trinidad & Tobago
Email: socawich@hotmail.com



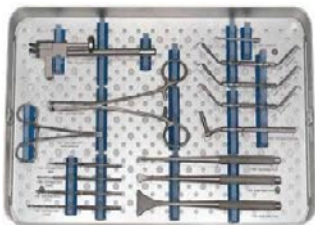
TRINIDAD ORTHOPEDICS LIMITED



Stimulan Rapid Cure Biocomposite
Bring the challenge of infection under your control



SuperCable®
Iso-Elastic TM Polymer Cerclage
Fatigue strength superior to metal cables and wire -Leads to Reduced Complications from breakage.



Memory Staple
A nitinol memory-alloy staple designed to provide fast and stable fixation in a variety of procedures.



Proximal Femoral Nail (PFN) Nailing
Static or dynamic locking can be performed via the aiming arm in 180 mm & 240 mm length nail.

Liver and Pancreatic Surgery became formalized as a surgical sub-specialty in the English-speaking Caribbean in the year 2010 when 5 surgeons who pursued fellowships in hepatopancreatobiliary (HPB) surgery returned to the Caribbean. Dr Wesley Francis trained at the Tom Baker Cancer Center in Calgary and was the first fully trained HPB surgeon to return home to the Bahamas in 2009. This was followed by Dr. Ravi Maharaj (Tata Memorial Hospital, Mumbai, India) who returned in 2009, Professor Shamir Cawich (Southampton University NHS Trust, U.K.) who returned in 2011, Dr. Patrick Roberts (University of Toronto, Ontario, Canada) who returned in 2012 and Dr. Kimon Bonadie (McGill University Health Center, Montreal, Canada) who returned in 2014.

These 5 HPB surgeons repatriated to different islands across the Caribbean, and initially begun their practices isolated from each other. However, after being exposed to healthcare delivery outside the Caribbean, they appreciated that a multidisciplinary team (MDT) approach to liver and pancreatic diseases was the standard of care [1-4]. By providing a structured forum to exchange information and ideas, the MDT approach improves working relationships, expedites investigations, promotes evidence-based treatment and ultimately improves clinical outcomes [1-6]. In an attempt to preserve these principles, this core group came together to form an informal association. During an impromptu meeting at the 2014 AHPBA Symposium, and under the stewardship of Dr. Wesley Francis, several Caribbean HPB Surgeons developed the idea to form a formal association.

Trinidad Orthopedics Limited
was established in 2007 and is one of the leading distributors of orthopedic and spine implants in the Caribbean.

We carry a wide range of orthobiologics, braces and bone graft substitute.

Trinidad Orthopedics Limited
43 Church Street, St. James, Trinidad, W.I.
(868) 622-8457/223-7495
triniortho@gmail.com
support@trinidadorthopedicsltd.com



Impromptu meeting of Caribbean HPB Surgeons at the 2014 AHPBA Annual Symposium in Miami - where the Caribbean Chapter was originally conceptualized. From left, Dr. A. Thornton (Barbados), Professor S. Cawich (Trinidad & Tobago), Dr. D Major (The Bahamas), Dr. W Francis (The Bahamas) and Dr. K Bonadie (Cayman Islands).

The association was formally recognized as a Caribbean Chapter by both the Americas Hepatopancreatobiliary Association (AHPBA) as well as the International Hepatopancreatobiliary Association (IHPBA). These were important landmarks in the evolution of HPB surgery in the Caribbean. Dr. Welsey Francis was elected as the inaugural president of the Caribbean Chapter and spearheaded the formal induction into the the AHPBA and IHPBA.



Members of the Caribbean Chapter of the AHPBA at the first Annual Symposium in Nassau, Bahamas on January 27, 2017. From left to right, Dr. Patrick Roberts, Dr. Greg Padmore, Dr. Leo Paul Powell, Prof. Shamir Cawich, Prof. Elijah Dixon, Dr. Wesley Francis, Prof. Charles Vollmer, Dr. Ravi Maharaj, Dr. Philip Larrimore, Dr. Don Major, Prof. Omar Rashid and Dr. Soni Gautam



Formal induction of the Caribbean Chapter to the AHPBA on April 19, 2016. The outgoing 2015-2016 AHPBA President, Prof. Javier Lendoire (right) delivers a plaque to the Caribbean Chapter AHPBA President, Dr Wesley Francis (centre), alongside the incoming 2017-2018 AHPBA President, Prof. Rebecca Minter (right).



The IHPBA formally inducts the Caribbean Chapter at the 12th Annual World Congress of the IHPBA in Sao Paulo, Brazil on April 22, 2016. From left to right, Dr. William Jagannath (IHPBA President), Dr. Wesley Francis (Caribbean Chapter President), Dr. Oscar Inventarza (Argentina Chapter President) and Dr. Javier Lendoire (AHPBA Secretary).

Since its formal induction, the Caribbean Chapter has been active across the region promoting awareness of diseases affecting the liver and pancreas. This commenced with the first annual Educational Symposium held in Nassau, Bahamas on January 27, 2017. Most recently on January 30, 2021, and despite the COVID-19 epidemic, the Caribbean Chapter organized a virtual joint meeting with the Indian Chapter and the Canadian Chapter of the AHPBA. This attracted over 300 participants from every continent on the globe, cementing the Caribbean as a notable contributor to the HPB specialty on a global stage.

The region has seen many other benefits from the formation of the Caribbean Chapter. For example, it has stimulated research across the Caribbean. In the five-year period since the Chapter was formed, over 40 articles in the realm of HPB surgery have been published by our members in peer-reviewed international journals. And every year since its induction, members of the Caribbean Chapter' have presented research papers on an international platform at the Annual AHPBA Symposium.

Frequent audits [7,8], evaluation of research data [9] and formulation of Caribbean-specific guidelines [1,10,11] under the auspices of the Caribbean Chapter have translated into better surgical outcomes for our patients across the Caribbean. There is existing data to show that liver and pancreatic surgery in the Caribbean is performed with outcomes that are comparable to international standards [7,8,9,12], despite the challenges in clinical practice across the region [13]. And there has now been expansion of modern laparoscopic HPB operations to territories in the Caribbean where it has traditionally has been unavailable [14,15].

An un-anticipated outcome from the collaboration and research has been the realization that many persons in the Caribbean do not have the conventional "normal" liver anatomy. Data from the Chapter has shown that there is variant biliary anatomy in 28.3% of Caribbean persons [16], abnormal liver surface anatomy in 15-20% [17,18,19], abnormal arterial anatomy in 37% [20,21] and variant hepatic venous anatomy in 72% of persons [22]. These data have allowed Caribbean HPB surgeons to adapt their liver resection techniques to adapt to the variant anatomy.

It is clear that the work from the Caribbean Chapter of the AHPBA has made an invaluable contribution to the progress of liver and pancreas surgery in the region. But the most obvious benchmark that HPB surgery has progressed is the increase in new graduates in general surgery who have a keen interest in the subspecialty and have sought fellowship training.

While HPB surgery in the Caribbean started with the return of 5 Caribbean nationals, within a decade that number doubled. The Caribbean Chapter recently inducted four new surgeons: Dr. Don Major (Bahamas), Dr. Ammiel Arra (Trinidad & Tobago), Dr. Greg Padmore (Barbados), Dr. Fawwaz Mohammed (Trinidad & Tobago). The Caribbean Chapter, now under the leadership of Professor Cawich (Chapter President) and Dr. Maharaj (Vice President) welcomed the new members to the fraternity in 2021 and will continue to build on the already strong foothold built by the outgoing administration. The Chapter remains committed to promoting an understanding of liver, pancreatic and biliary disorders as well as encouraging exchange of scientific knowledge among healthcare professionals interested in HPB diseases.

REFERENCES:

1. Cawich SO, Johnson PB, Shah S, Roberts S, Arthurs M, Murphy T, Bonadie KO, et al. Overcoming obstacles to establish a multidisciplinary team approach to hepatobiliary diseases: a working model in a Caribbean setting. **Journal of Multidisciplinary Healthcare**. 2014; 7 :227-230. DOI: 10.2147/JMDH.S60604
2. VanLeeuwen AF, Voogt E, Visser A, VanderRijt AA, VanderHeide A. Considerations of healthcare professionals in medical decision-making about treatment for clinical end-stage cancer patients. **J Pain Sympt Management**. 2004; 28(4): 351-355.
3. Fennell ML, Das IP, Clauser S, Petrelli N, Salner A. The organization of multidisciplinary care teams: modeling internal and external influences on cancer care quality. **J National Cancer Inst Monogr**. 2010; 40: 72-80.
4. Back MF, Ang ELL, Ng WH, et al. Improvements in quality of care resulting from a formal multidisciplinary tumour clinic in the management of high-grade glioma. **Ann Acad Med Singapore**. 2007; 36(5): 347-351.
5. Stephens MR, Lewis WG, Brewster AE, et al. Multidisciplinary team management is associated with improved outcomes after surgery for esophageal cancer. **Dis Esophagus**. 2006; 19(3): 164-171.
6. Forrest LM, McMillan DC, McArdle CS, Dunlop DJ. An evaluation of the impact of a multidisciplinary team, in a single centre, on treatment and survival in patients with inoperable non-small-cell lung cancer. **Brit J Cancer**. 2005; 93(9): 977-978.
7. Cawich SO, Maharaj R, Naraynsingh V, Pearce NW, Francis W, Bonadie KO, Thomas DA. Clinical Outcomes after Major Hepatectomy are Acceptable in Low-Volume Centers in the Caribbean. **World Journal of Hepatology**. 2019; 11(2): 199-207.
8. Cawich SO, Mohanty SK, Bonadie K, Simpson LK, Ramnarace R, FaSiOen P, Singh Y, Naraynsingh V, Francis W. Laparoscopic Completion Cholecystectomy: An Audit from the Americas Hepato-Pancreato-Biliary Association (AHPBA) Caribbean Chapter. **Cureus**. 2020; 12(10): 11126. DOI 10.7759/cureus.11126
9. Spence D, Dyer R, Andall-Brereton G, Barton M, Stanway S, Bray F, Cawich SO, et al. Cancer Control in Small Island Nations III: Cancer Control in The Caribbean Island Countries and Territories. Some Progress but the Journey Continues. **Lancet Oncology**. 2019; DOI:10.1016/S1470-2045(19)30512-1
10. Wharfe G, Benson AB, Bartholomew M, **Cawich SO**, Chin S, Francis W, Griffith S, Maharaj R, Minocha V, Roberts P, Sinanan A. NCCN Harmonized Guidelines for the Caribbean: Colon Cancer. **National Comprehensive Cancer Network: Caribbean Guidelines**. 2018, Ver 2 (COL) 1-10.
11. Wharfe G, Benson AB, Bartholomew M, Cawich SO, Chin S, Francis W, Griffith S, Maharaj R, Minocha V, Roberts P, Sinanan A. NCCN Harmonized Guidelines for the Caribbean: Rectal Cancer. **National Comprehensive Cancer Network: Caribbean Guidelines**. 2018, Ver 2 (REC) 1-10.
12. Cawich SO, Thomas DAW, Ramjit C, Bhagan R, Naraynsingh V. Complex liver resections for colorectal metastases: Are they safe in the low-volume, resource-poor Caribbean setting? **Case Rep Surg**. 2015; 570968:1-6. DOI:10.1155/2015/570968.
13. Naraynsingh V, Bahadursingh S, Maharaj R, Harnarayan P, Cawich SO. Surgery in the West Indies: A perspective from Trinidad. **Current Medicine Research and Practice**. 2014. 4: 1126-129.
14. Griffith SP, Cawich SO, Mencia M, Naraynsingh V, Pearce NW. Laparoscopic Liver Resection by Distance Mentoring - Trinidad to Barbados: A Report. **Cureus** 2019; 11(9): 5796. DOI:10.7759/cureus.5796
15. Eyob B, Boeck MA, FaSiOen PF, Cawich SO, Kluger MD. Ensuring Safe Surgical Care Across Resource Settings via Surgical Outcomes Data and Quality Improvement Initiatives. **International Journal of Surgery**. 2019;72: 27-32.
16. Cawich SO, Sinanan A, Deshpande RR, Gardener MT, Pearce NW, Naraynsingh V. Anatomic Variations of the Intra-Hepatic Biliary Tree in the Caribbean: A Systematic Review. **World Journal of Gastrointestinal Endoscopy**. 2021: In Press
17. Cawich SO, Gardner MT, Barrow M, Barrow S, Thomas D, Ragoonanan V, Mahabir A, Ali R, Naraynsingh V. Inferior Hepatic Fissures: Anatomic Variants in Trinidad & Tobago. **Cureus** 2020; 12(5): 8369 DOI:10.7759/cureus.8369
18. Gardner MT, Cawich SO, Shetty R, Pearce NW, Naraynsingh V. Hepatic Surface Grooves in an Afro Caribbean Population. **Italian Journal of Anatomy & Embryology** 2015; 210(2): 117-126
19. Cawich SO, Gardner MT, Shetty R, Pearce NW, Naraynsingh V. Accessory Inferior Sulci of the Liver in Afro-Caribbean Populations. **International Journal Biomedical Sciences** 2016; 12(2): 58-64
20. Johnson PB, Cawich SO, Shah S, Gardner MT, Roberts P, Stedman B, Pearce NW. Vascular Supply to the Liver: Report of a Rare Arterial Variant. **Case Reports Radiology** 2013; 969327: 1-3
21. Johnson PB, Cawich SO, Roberts P, Shah S, Gardner MT, Gordon-Strachan G, Pearce NW. Variants of hepatic arterial supply in a Caribbean population: A computed tomography based study. **Clinical Radiology** 2013; 68(8): 823-827
22. Cawich SO, Johnson P, Gardner MT, Pearce NW, Sinanan A, Gosein M, Shah S. Venous Drainage of the Left Liver: An Evaluation of Anatomic Variants and their Clinical Relevance. **Clinical Radiology**. 2020; 75(12):964-66.

Bulletin: Dr. Cameron Wilkinson bestowed with the 2019 Royal Award of Commander of the British Empire (CBE).



The Caribbean College of Surgeons extends our congratulations to Dr. Cameron Wilkinson on being bestowed with the 2019 Royal Award of Commander of the British Empire (CBE) as part of Her Majesty the Queen's Birthday Honours List.

Dr. Cameron Wilkinson was born in Basseterre, St. Kitts on April 20th 1963. His dream to become a doctor was cemented in his mind when he lost his mother at the age of 11 and his father the following year. He did not wish for another kid to go through the struggles that he and his siblings had to endure. In 1982, Cameron won the State Scholarship in St. Kitts and Nevis to study medicine at the University of the West Indies in Jamaica. He won the prizes for the most outstanding student in Surgery and Medicine and Therapeutics at the Queen Elizabeth Hospital in Barbados and then graduated with a M.B.B.S. degree in 1989.

Dr. Wilkinson completed a general surgery residency program in 1995 at Harlem Hospital in New York City, winning the Program Director's Prize for most outstanding chief resident. He also obtained a Citation for Outstanding Service to the Greater Harlem Community in recognition of his dedicated service. He completed a fellowship in Critical Care and Surgical Endoscopy at Harlem Hospital, New York and then returned to St. Kitts with his wife and three children.

Dr. Wilkinson is a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons and a Fellow of the Caribbean College of Surgeons. He is the Chief Surgeon and Medical Chief of Staff of the Health Institutes in St. Kitts, Past President of the Rotary Club of Liamigua, Past President of the UWI Alumni Association, current president of the Caribbean College of Surgeons and a clinical lecturer at Windsor University school of Medicine and the University of Medicine and Health Sciences.

Dr Wilkinson is currently the longest serving physician with the ministry of health in St. Kitts. He played a pivotal role in the development of several services at the Joseph N. France General Hospital including the Emergency Medical Service, the Intensive Care Unit, the Electrocardiography Unit and Surgical Endoscopy. Dr. Wilkinson has been very active in raising funds for the hospital, which has led to the purchase of several important pieces of equipment and supplies. His most recent fund raising netted over \$100,000.00 and led to the purchase of an ambulance for the hospital.

He continues to be a humble servant to his country. The Caribbean College of Surgeons wishes to congratulate Dr. Cameron Wilkinson for being bestowed with the Royal Award of Commander of the British Empire (CBE) as part of Her Majesty the Queen's Birthday Honours List.

Bulletin: Professor Vijay Naraynsingh honoured at the American College of Surgeons' Meeting.

The Caribbean College of Surgeons wishes to congratulate our Past President, Professor Vijay Naraynsingh, for being awarded the Honorary Fellowship of the American College of Surgeons (ACS). He is now the second West Indian to be so honoured by the ACS. The previous Honoree is the founding President of the Caribbean College, Professor Sir Errol Walrond (in 2015).

In 106 years, the ACS has granted 475 Honorary Fellowships to individuals who 'possess an international reputation in the field of surgery' or 'have rendered distinguished humanitarian services'. He thus joins some of the worlds' most outstanding surgeons such as William Halsted, Bill Heald, Norman Browse, Lord Moynihan, Grey Turner, Fritz de Quervain, Ernest Milac, Eugene Polya, Leo Dejardin, Archibald Mac Indoe, amongst others.

Following graduation from medical school in 1974 with medals and distinctions in Anatomy and Surgery, Prof. Naraynsingh has had a distinguished career that led to Fellowships in several international colleges, a Personal Chair and a Departmental Chair in the University of the West Indies (UWI). He is the recipient of awards from 36 organizations locally and internationally for contributions to medicine, community service and humanitarian work. At age 42, he was one of the youngest recipients of the Chaconia Gold National Award for service in Medicine to Trinidad & Tobago. In 2003, he was the first Caribbean surgeon to be granted the Fellowship of the Royal College of Surgeons without examination. In 1991, he was chosen by *Medicins Sans Frontieres* (Nobel laureate) to be one of five surgeons worldwide to sit on an international expert panel on colon trauma surgery (Brussels, Belgium). He was chosen as the surgeon to the Pope when John Paul II visited Trinidad and Tobago in 1985.



Internationally, Prof. Naraynsingh has been a pioneer by describing 14 new operations that have been documented in the international surgical literature: lateral approach to the profunda femoris artery, rectus repair for abdominal wall herniae, transperitoneal exclusion of aortic aneurysm, mini-laparotomy ureterolithotomy,

repairs for fractured penis, retrograde thyroidectomy, cervical leverage for retrosternal goitre, swiss roll and saw-tooth operations for breast fibroadenomas .

In the Caribbean region, he has been credited with the following "firsts": replantation of severed limbs (1984), vascularized free tissue transfer (1984), myocutaneous flaps for breast reconstruction (1981), laparoscopic cholecystectomy (1991), retroperitoneal aortic surgery (1984) and mini-laparotomy cholecystectomy (1992). He was also the first to perform the following operations in Trinidad & Tobago: kidney transplantation (1988), carotid surgery for stroke under local anaesthesia (1984), primary repair for left colon obstruction (1985) and primary repair for colon trauma (1991), and extensive use of myocutaneous flaps in general and orthopaedic surgery (1981).

Prof. Naraynsingh is an accomplished educator. He taught and administered programs at the UWI for over 35 years, and started the postgraduate surgical sub-specialties in Trinidad & Tobago. He has helped to mentor and shape the lives of many doctors who are now accomplished surgeons employed at the highest levels at home and abroad.

Prof. Naraynsingh is one of the most published academics at the UWI. He has authored 5 book chapters on surgery, published more than 330 articles in every major peer-reviewed English-speaking journal, and delivered over 150 podium presentations at scientific platforms across the globe. His excellence in academia is evidenced by the fact that he mentored more than 70 surgeons on their first scientific publications. On the basis of his published work, Prof. Naraynsingh was the recipient of the Vice-Chancellor's award for Excellence in Research (2012) and the Cariscience Award for the most outstanding Caribbean Researcher (2015).

Prof. Naraynsingh has a distinguished record of public service. He founded the Avatar Medical Auxiliary that provides the underprivileged with access to surgical care, participated in the Kids First program for underprivileged children in Guyana and has organized over 10 outreach activities in Trinidad & Tobago providing free surgical care to underprivileged patients.

We now extend heartiest Congratulations to Prof. Naraynsingh on this well-deserved accolade.

Bulletin: Professor Shamir Cawich invited as guest panelist at the American College of Surgeons' Meeting.

The Caribbean College of Surgeons extends our congratulations to Professor Shamir Cawich on being recognized by the American College of Surgeons for his contribution to surgery. Prof. Cawich was invited to serve as an expert panelist in the International Educational Session (VE210) at the American College of Surgeons' Annual Clinical Symposium in San Francisco, USA.

Prof. Cawich was one of three surgeons selected as expert panelists for this session and served by leading discussions on clinical presentations from international surgeons. The Caribbean College of Surgeons wishes to congratulate Prof. Cawich for the distinction of being the first Caribbean surgeon to be invited by the American College of Surgeons to serve as an expert panelist at the ACS Annual Clinical Symposium.



Members of the Expert Panel of the American College of Surgeons Education Session VE210

Bulletin: Caribbean College of Surgeons COVID 19 Advisory.

You would have last heard from the Council of the CCOS when it took the proactive step of postponing the annual conference in anticipation of the COVID19 pandemic in March, 2020. At that time no cases had been reported in the Caribbean. Our territories have now been impacted in a real sense and our fragile health infrastructure continues to be tested to the maximum.

Our members and their colleagues have been called upon to work on the front line dealing with this dangerous virus with greater shortages of testing, protective equipment, beds, ventilators etc. than those in countries with greater capacities who are crying out about critical shortages of these items. We therefore have to do the best for our patients and our families with less.

The Caribbean College of Surgeons have produced the following advisory:

GENERAL DIRECTIONS

- We reiterate advice for all health providers to wear a mask during patient encounters and where possible provide masks for patients during those encounters. Eye shields should be used with coughing patients. Wash one's hands in between every patient encounter.
- Protect your family at home, by reducing close encounters unless you have all been tested negative.
- Since it appears that the illness is most severe in the elderly and those with other severe illnesses, this is the time to reinforce one's state of health and fitness.

WORKING CONDITIONS

- Surgeons and anaesthetists face the greatest risk in treating COVID19 infected patients without adequate protective gear. Where shortages of protective gear exist, they should be reserved for those with known infection and those with emergencies where there has been no time to find out the patient's status. Surgeons therefore have a vested interest in using their influence to have testing as widely available as possible, particularly for hospitalized patients who may undergo surgery.

- Upper gastro-intestinal or airway investigations should be avoided in patients whose COVID19 status is unknown. Naso-gastric tube placement is also an aerosol generating procedure and should only be undertaken with suitable precautions.
- All elective outpatient surgery under general anaesthesia in untested patients should be deferred.
- Outpatient surgery under local, regional and spinal anaesthesia may be done, for such priorities as biopsies, the treatment of cancers and hernias at risk for complications. Patients should be given masks to wear during such procedures and where possible non-essential operations on the face should be avoided.
- Emergency surgery should be carried out with a full change of clothing in-between cases. Laparoscopic procedures should not be carried out unless the patient is proven COVID19 negative both clinically and on testing
- Any patient prioritised for urgent planned surgery must be assessed for COVID19 and the additional risks factored into planning and consent.
- Except under unavoidable circumstances, both intubation and extubation of patients should occur in the operating theatre

PROTECTING INCOME

For those who do not work in a public service, protecting income is going to be difficult given the severe effect the pandemic has had on the economies of countries in general, and the wiping out of the tourist economy in our Caribbean territories. This is the time to reiterate one's professionalism in protecting your patients, yourself and your families. Taking shortcuts can endanger yourself and your family.

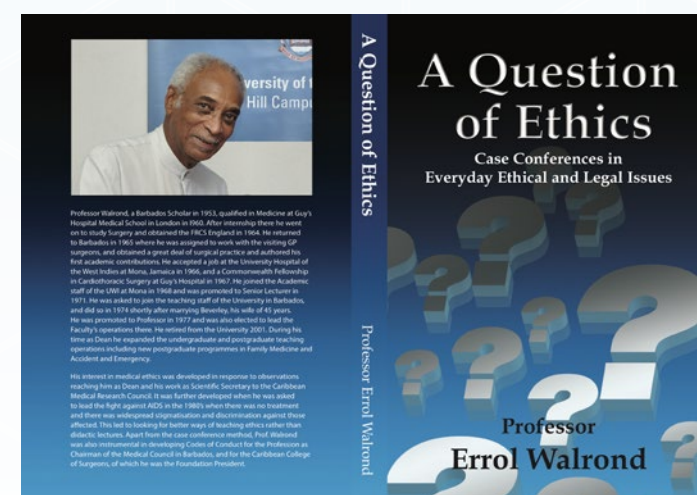
*Advisory from the Caribbean College of Surgeons
Prepared by Professor Sir Errol Walrond.*

Bulletin: Professor Sir Errol Walrond's New Book on Medical Ethics Published.

The Caribbean College of Surgeons extends our congratulations to Professor Sir Errol Walrond on the publication of his new book entitled "A Question of Ethics: Case Conferences in Everyday Ethical and Legal Issues."

Professor Sir Errol Walrond is a stalwart in Caribbean Surgery. He qualified in medicine from the Guy's Hospital Medical School in London in 1960 and sent on to obtain the FRCS England in 1964. He returned to Barbados in 1965 and joined the academic staff of the University of the West Indies at Mona in 1968. In 1974, he joined the academic staff at Cave Hill Campus in Barbados and was promoted to Professor of Surgery in 1977 and also served as the UWI Dean of Medical Sciences.

Prof Sir Errol Walrond has served the profession in the Caribbean as the UWI Dean of Medical Sciences, Scientific Secretary of the Caribbean Medical Research Council, Chairman of the Barbados Medical Council and Foundation President of the Caribbean College of Surgeons. In 2011, he was conferred with the accolade Knight of the Order of St. Andrew – the highest honour given by the monarch of Barbados, awarded for extraordinary and outstanding achievement and merit in service to Barbados or to humanity at large.



Prof. Sir Walrond's new book has received glowing reviews:

Sir Henry Fraser, Professor Emeritus of Medicine and Clinical Pharmacology at the University of the West Indies, wrote: *"The range of problems and issues presented is quite extraordinary. One of the most common, mandatory requirements for many medical procedures, both surgical and interventional diagnostic procedures, is the consent of the patient. This may appear routine, and we all have had to secure it as junior doctors in routine situations. But quite often it is complex, either because patients are not fully in command of their faculties, do not understand the situation, or have family members or 'next of kin' with strong emotional opinions that may conflict with the medical view of what is best for the patient. This is one of the most fully explored subjects, with many examples of potential conflict and suggested approaches for resolution."*

Professor Ezra Griffith, Professor Emeritus of Psychiatry and African-American Studies at Yale University, wrote: *"The structure of the text is clear and is maintained throughout its 339 pages. There are fourteen chapters covering major topics in medical ethics. The first four chapters are entitled 'consent', 'confidentiality', 'counselling', and 'alternatives in medicine'. The next four cover what Walrond calls 'to live or die' (with subsections exploring matters of resuscitation and the last period of a patient's life), 'futility in care', 'professional conduct and risks', and 'allocation of resources'. The final six chapters address ethics problems encountered in 'child abuse', 'patients at risk' (such as the restraining of a patient, and the impaired physician), 'criminal cases', 'culture and religion', 'legal jeopardy' (concerning, for example, religious refusal of blood transfusion), and 'public health'. Each chapter contains several subsections, which represent specific subject areas."*

The Caribbean College of Surgeons wish to congratulate Professor Sir Errol Walrond on the publication of his most recent book.

Bulletin: Recent Graduates in Surgery for the Caribbean

The Caribbean College of Surgeons extends our congratulations to recent graduates from post-graduate training programmes in surgery across the region.

University of the West Indies’ Cave Hill Campus:

Dr. Damien Barker (General Surgery)
Dr. Rico Boyce (General Surgery)

University of the West Indies’ Mona Campus:

Dr. Miguel Brissett (ENT)
Dr. Josina Duncan (ENT)
Dr. Garriel Barker (General Surgery)
Dr. Chapman Longmore (General Surgery)
Dr. Shaun Smith (General Surgery)
Dr. Ronette Goodluck (Neurosurgery)
Dr. Mikhail Harty (Neurosurgery)
Dr. Peyton Lawrence (Neurosurgery)
Dr. Carlos Neblet (Plastic Surgery)
Dr. Bruce Blagrove (Orthopaedics)
Dr. Darren Fray (Orthopaedics)
Dr. Joseph Reynolds (Orthopaedics)

University of the West Indies’ St. Augustine Campus:

Dr. Christo Cave (General Surgery)
Dr. Nahmorah Bobb (General Surgery)
Dr. Sangeeta Parbhu (General Surgery)
Dr. Chanelle Skeete (General Surgery)
Dr Allan Tinnie (General Surgery)
Dr Imran Aziz (General Surgery)
Dr Nicholas Figaro (ENT)
Dr David Richards (ENT)
Dr Leon Noel (ENT)
Dr Shivan Goolcharan (Urology)
Dr. Rishi Rampersad (Orthopaedics)
Dr. Viren Solomon (Orthopaedics)
Dr. Amanda Partap (Orthopaedics)

University of Guyana:

Dr. Sandy Solomon (General Surgery)
Dr. Jason Griffith (General Surgery)
Dr. Christopher Chung (General Surgery)
Dr. Kapildev Tiwari (General Surgery)
Dr. Cheman Ramdharry (General Surgery)
Dr. Gorvinski Fraser (General Surgery)

We extend congratulations to these newly minted surgeons and welcome each of them to join the surgical fraternity in the Caribbean.

INSTRUCTIONS FOR AUTHORS.....

The Journal is published by the Caribbean College of Surgeons to provide a forum through which surgical experiences and scientific research can be shared between practitioners across the Caribbean.

The Journal seeks to publish data aimed at clinical practice in the diverse Caribbean healthcare environments that often differs from those in Developed countries. Our aim is to make a meaningful impact in surgical practice for the Caribbean.

The Journal covers all medical disciplines and basic research to promote the understanding of the pathophysiologic basis, treatment and prevention of diseases in the region.

The Journal publishes original scientific research, reviews, commentaries, viewpoints, conference proceedings and case reports. All submissions are peer reviewed by two independent reviewers. Authors are given opportunities to respond to reviewers’ comments and the final decisions are made by the Editor in Chief.

The authors bear professional and ethical responsibilities in publishing.

AUTHORSHIP

- Persons who directly contributed to the intellectual content of the paper should be cited as authors if they meet the following criteria: (1) conceived and planned the work that led to the paper, (2) wrote the paper or took part in the revision process and (3) approved the intellectual content in the final version.
- A statement disclosing the roles of each author with respect to the above criteria must be given.

INFORMED CONSENT

- There should be no identifying information included in the text, images, figures or photographs that form the manuscript, unless it is essential for scientific purposes. In this case, the patient or legal guardian must provide written informed consent for publication.
- The Caribbean College of Surgeons reserves the right to reject or withdraw published articles if informed consent has not been obtained.

ETHICAL RESPONSIBILITIES

- The authors must confirm in a written statement that the study was reviewed and approved by the local Institutional Review Board.
- The authors must confirm in a written statement that all material relating to human investigations and animal experiments conforms to standards in accordance with the Declaration of Helsinki.
- The Caribbean College of Surgeons reserves the right to reject or withdraw published articles if ethical standards have not been met and/or informed consent has not been obtained.

CONFLICT OF INTEREST

- Each author must disclose financial interests, personal commitments and/or competing interests that may represent actual or potential conflicts of interest that might bias their work.
- The Caribbean College of Surgeons reserves the right to reject or withdraw published articles if any actual or potential conflict of interest exists.

Please note the following instructions for preparation of manuscripts:

COVERING LETTER

Please submit a cover letter for each manuscript. The cover letter should include:

- A statement on the authorship and each author’s contribution to the manuscript
- A disclosure statement concerning conflicts of interest
- Confirmation that the manuscript has only been submitted to the JCCS and has not been previously published or being considered for publication elsewhere
- Confirmation that the manuscript contains original content
- Corresponding author’s full name, mailing address, telephone number and email address.

MANUSCRIPT COMPILATION

The manuscript should be arranged in the following order:

- (a) Title Page
- (b) Abstract
- (c) Background
- (d) Methods
- (e) Results
- (f) Discussion
- (g) Conclusion
- (h) Acknowledgements
- (i) References
- (j) Tables and Figures

- The manuscript should be submitted using British English
- The manuscript should be double spaced, with lateral margins of 1.5cm. The text should be prepared with Micro-soft Word using Times New Roman at 12 Font.
- Headings should be positioned flush with the left margin and in sentence case. First-level headings are capital-ized and **BOLDFACE**. The second level headings are capitalized and in *ITALICS*.
- Use SI units only throughout the manuscript
- Limit abbreviations to those that are absolutely necessary. The abbreviation must be defined and in parentheses the first time it is used. Abbreviations must not be used at the commencement of a sentence.
- It is preferable to use only generic names for all drugs throughout the manuscript. However, a proprietary drug name can be used if the generic name and manufacturer is identified in parentheses.
- The name and location of manufacturers of equipment and instruments must be given in parentheses in the text.
- Please observe the following word limits:
- Letters to the Editor: 500 words

BACKGRIOUND

- This section should be short – one or two paragraphs – and is used to state the existing data on your topic. It is also used to introduce the main objective/ research question/hypothesis of your study.

METHODS

- A detailed description of the study design should be presented, including definitions, descriptions of inclusion and exclusion criteria, calculations of sample size and methods of sampling. There should also be a detailed dis-cussion of the methods used for statistical analyses and the statistical software used.

RESULTS

- The results of your study are presented in this section in a clear and concise manner. Please include details of statistical analyses, where relevant.

DISCUSSION

- This section is used to provide a synopsis of the findings of your work. This section should discuss mechanisms and explanations of your findings as well as comparisons to other published studies.
- Any relevant limitations of your study should be presented and discussed at this stager. A statement on the methods used to minimize limitations and/or compensate for these limitations is required.
- You are encouraged to include comments and viewpoints related to the findings.

CONCLUSIONS

- A clear conclusion that is directly supported by your results should be presented.

ACKNOWLEDGEMENTS

- This section is used to acknowledge contributors who may have provided support but do not meet the criteria to be listed as authors.
- Any source of financial support should be included in this section.

REFERENCES

- References should be numbered in the order in which they appear cited in the body of the manuscript.
- Please use Arabic numbers to list the references.
- Each reference should appear on a separate line using singe spacing.
- The references should be formatted in Vancouver style.
- List the authors’ names with the surname appearing first. No commas should be used after the surname. After a single space list the abbreviations of the authors’ given names, without fullstops. A comma follows the last initial of the author’s given names.
- If there are more than 6 authors, list the first 6 authors followed by “et al”.
- Use official abbreviations for journal names, if available. The journal name should be in italics and is followed by a fullstop.
- List the year followed by a semi-colon. After a single space, the journal issue should be listed with volume num-bers in parentheses, followed by a colon. The page numbers appear next followed by a full stop.
- Do not use citation manager software to compile your references for the final submitted version.
- Please see the following examples:
Brown J, Black B, Wilson F. An example of referencing for the Caribbean College of Surgeons. *J Carib Coll Surg*. 2019;1(1):25-30.

FIGURES AND TABLES

TABLES

- Each table should have a short descriptive title.
- Tables are listed in the order that they are quoted in the manuscript, using Arabic numbers.
- Tables should be prepared in Microsoft word format using regular font 12 type
- Each table should have a caption / legend to describe its content appearing immediately below the table.

FIGURES

- Figures should be submitted in JPEG format or TIFF format.
- Any figure submitted should have a minimum resolution of 300 DPI
- Figures should be clearly labeled with arrows and/or letters
- Each figure should be accompanied by a caption/legend that appears immediately beneath the figure



**Your Most Trusted
Heart Care Partner, For Life**



WHO WE ARE:

- » CHCm, with over 27 years of experience, has proven to be an excellent full-service Cardiac and Vascular Care Centre, with one of the best Heart Surgery Units in the world.
- » We are pioneers of the **24HR HEART ATTACK UNIT** which offers life-saving procedures, such as Angioplasty and other advanced Cardiovascular Services.
- » With an **EXPERT TEAM** that is **ALWAYS READY**, we continue to be one of the most affordable in the region.

OUR SERVICES:

- » **24HR CARDIAC SURGERY**
- » **24HR INTERVENTIONAL CARDIOLOGY & CARDIAC CATHETERIZATION**
- » **VASCULAR AND ENDOVASCULAR SURGERY**
- » **ELECTROPHYSIOLOGY & DEVICES**
- » **INTERVENTIONAL RADIOLOGY & NEURORADIOLOGY**
- » **STRUCTURAL HEART DISEASE**
- » **ECHOCARDIOGRAPHY & STRESS TESTING**
- » **OTHER ELECTIVE PROCEDURES**



Put Your HEART in the Hands of EXPERTS



**EMERGENCY
628-HART
(4278)**

SURGERY & CARDIOLOGY SERVICES
18 Elizabeth Street, St.Clair
Port-of-Spain, Trinidad. W.I.
1 (868) 628-6674/ 5978 Ext. 302
1 (868) 628-1451 (24hrs)

SURGERY SERVICES
Eric Williams Medical Sciences Complex
Mt. Hope, Trinidad. W.I.
1 (868) 645-1712
1 (868) 645-2640 Ext. 2751

✉ info@heartcare.com
🌐 www.heartcare.com
📘 caribbean heart care medcorp
📷 caribbean_heart_care_medcorp

1ST WORLD TREATMENT AT YOUR DOORSTEPS!!



**Medical
ASSOCIATES**
Chaguana Hospital Limited

**Medical
ASSOCIATES
Hospital**

SERVICES INCLUDE:

- 24HR ACCIDENT & EMERGENCY SERVICES
- COMPREHENSIVE INTERNAL MEDICINE
- FULL SURGICAL UNIT
- OBSTETRICS & GYNAECOLOGY
- PAEDIATRICS
- ORTHOPEDICS
- COMPREHENSIVE RADIOLOGY SERVICE
- CARDIAC CATHETERIZATION LAB
- ACUTE STROKE UNIT
- EXECUTIVE MEDICALS
- UROLOGY
- HOLMIUM LASER SURGERY
- CT ANGIOGRAPHY

We take pride in
providing our patients
the best care.

Our excellent health care team
will make sure that your medical
needs are always met.

Visit us at:

www.medicalassociatestt.info

or call TOLL FREE: 800-
4MED(4633)

Medical Associates St. Joseph:
662.2766/3256/3259

Medical Associates Chaguana:
612.4279/223.6898