

## **ELECTIVE (SSC5C) REPORT (1200 words)**

A report that addresses the above four objectives should be written below. Your Elective supervisor will assess this.

**Describe the pattern of disease/illness of interest in the population with which you will be working and discuss this in the context of global health: What are the common surgical emergencies in St. Vincent, and how does this differ from that in the UK?**

Not much data is available regarding the pattern of surgical emergencies in St Vincent. However, a 2013 study reviewed global data on surgical emergencies using information derived from the Global Burden of Disease Study 2010. From there, they concluded that the most common cause of death globally in an emergency surgical situation is due to complicated peptic ulcer disease. This was followed by aortic aneurysm, bowel obstruction and biliary disease. Thus, it would be expected that deaths from these surgical emergencies would be common in St Vincent as well.<sup>1</sup>

The study also differentiated between high and middle-low income countries. It found that high income countries had a greater health burden (defined as mortality, years of life lost and disability-adjusted life-years) per population than in middle-low income countries. This is due to the fact that high income countries have a higher prevalence of vascular disease in general, leading to greater vascular emergencies (namely peripheral arterial disease, aortic aneurysm and mesenteric ischaemia). Thus, high income countries had a greater overall health burden in comparison.<sup>1</sup> Therefore, as St Vincent has been classified by the world bank as an upper-middle income country<sup>2</sup>, it would be expected to have a slightly lower overall health burden than the UK, which is classified as a high income country.<sup>3</sup>

However, it is important to note that this study did not include trauma as a cause for surgical emergency. Therefore, the degree of health burden among the different income countries may not have been accurately represented.

**Describe the pattern of health provision in relation to the country which you will be working and contrast this with other countries, or with the UK: How is general surgical treatment organised and performed in St. Vincent? How does this compare to that in the UK?**

In general, healthcare in St Vincent is similar to that of the UK.<sup>4</sup> Patients in both countries have access to an accident and emergency department, where they can be referred for specialist treatment if necessary. Both countries also employ a multi-disciplinary team approach with the use of doctors, nurses, physiotherapists and other healthcare professionals. Patients also receive outpatient appointments following surgery, and are seen in clinics. Ward rounds also occur in both countries, and inpatients are reviewed daily.

However, resources are not as readily available as in the UK. For example, the hospital that we were placed in had run out of heparin and several antibiotics during our visit. Hospital records were also written solely on paper; unlike in the UK where records and laboratory results are often electronic. Radiographic images were also printed on actual films, instead of being digital images.

**Health related objective: Describe the epidemiology, pathophysiology, treatment and management of gallstones in St. Vincent.**

Gallstones are hardened deposits that may form within the gallbladder. They commonly affect populations in Australia, Europe and North America. They are also particularly prevalent in Native American populations. However, the incidence of gallstones is lower in Asian and African populations. Risk factors for gallstones include female gender, increasing age, obesity and diabetes. Clofibrate, a hepatic acyl-CoA cholesterol acyltransferase inhibitor, also increases levels of cholesterol, thus increasing the risk of gallstones.<sup>5</sup>

Gallstones can be classified into three different types: pure cholesterol stones, pigment stones or mixed composition stones. Pure cholesterol stones contain at least 90% cholesterol, while pigment stones contain at least 90% bilirubin. The latter can either be brown or black. Mixed composition stones have different proportions of bilirubin, cholesterol and calcium salts. Pure cholesterol gallstones arise due to a saturation of cholesterol, either due to an excess secretion or reduction in conversion of cholesterol to bile. Also, a reduction in bile salts may precipitate the saturation of cholesterol; resulting in cholesterol stones. On the other hand, black pigment stones are formed due to an increased breakdown of red blood cells, resulting in a rise in bilirubin. Brown pigment stones are due to a bacterial infection in the bile ducts, causing a rise in enzymes that convert conjugated bilirubin to unconjugated. Thus, the unconjugated bilirubin precipitates as calcium salts, forming brown pigment stones.<sup>5</sup> Mixed stones can form by a combination of the two.

Gallstones can be symptomatic or asymptomatic. Typical presentations would be several episodes of right upper quadrant or epigastric pain, often associated with fatty meals. There may be accompanying nausea and vomiting as well. More severe presentations involve the inflammation of the gallbladder, or bile ducts, termed cholecystitis and ascending cholangitis respectively. In such situations, systemic symptoms such as fever may be present. Gallstones may also become lodged in the common bile duct, causing obstructive jaundice. This is termed choledocholithiasis.<sup>5</sup>

During cholecystitis, clinical examination may reveal a positive Murphy's Sign. Diagnosis of gallstones may be made with an ultrasound scan, magnetic resonance cholangiopancreatography (MRCP) or endoscopic ultrasound.<sup>6</sup> They may also be found incidentally on abdominal radiographs.<sup>5</sup> Treatment of gallstones depends on their severity. In the UK, the National Institute for Clinical Excellence (NICE)

guidelines state that patients with asymptomatic gallstones should be reassured and only treated once symptomatic. Patients with symptomatic gallstones will be given diet and lifestyle advice, and offered an elective laparoscopic cholecystectomy. In cases of acute cholangitis, this will typically be performed within the week of diagnosis. For patients with stones in the common bile duct, they are offered an Endoscopic Retrograde Cholangiopancreatography (ERCP) or surgical removal of the stones. Biliary stenting may also be employed should ERCP be unsuccessful.<sup>6</sup>

Management of gallstone disease is largely similar in St Vincent. Elective cholecystectomies can be performed both laparoscopically and open. However, the hospital that I visited does not have the resources for an ERCP or MRCP to be performed.

Personal/professional development goals.: To develop my communication and clinical skills. To practice and develop surgical skills.

During this placement, I have learnt a lot. We had daily teaching sessions after ward rounds, which helped to brush up my clinical knowledge. Dr Dougan, our consultant, asked us many questions relating to surgery and anatomy. I really appreciated this as he is very knowledgeable and is a good teacher. Also, he did teach us clinical examination techniques during ward rounds and clinics. I found it interesting to see the subtle differences in examination techniques between the UK and St Vincent. It was extremely useful to go through the examination of varicose veins as well as inguinal hernias. I was also able to practice my communication skills by presenting cases to the consultant during the ward round. In terms of surgical experience, I was given the opportunity to debride a wound, which is something that I had not done before. The hospital did not have any proper surgical blade handles, thus it was an extremely novel experience for me. Overall, it was an enriching experience that shed light on the way medicine is practiced in other countries, and added greatly to my learning.

(1057 words)

#### References:

- 1) Stewart B, Khanduri P, McCord C, Ohene-Yeboah M, Uranues S, Vega Riveria F, Mock C. Global disease burden of conditions requiring emergency surgery. *British Journal of Surgery*. 2013;101(1): 9-22. <http://onlinelibrary.wiley.com/doi/10.1002/bjs.9329/full> (accessed 11th April 2015).
- 2) The World Bank. St. Vincent and the Grenadines. <http://data.worldbank.org/country/st-vincent-and-the-grenadines> (accessed 11th April 2015)

- 3) The World Bank. United Kingdom. <http://data.worldbank.org/country/united-kingdom> (accessed 11th April 2015)
- 4) Boros M J. Emergency medical services in St Vincent and the Grenadines. *Prehospital Emergency Care*. 2003;7(4): 477-81. <http://www.ncbi.nlm.nih.gov/pubmed/14582103> (accessed 11th April 2015)
- 5) Niezje G E. Gallstones. *Nigerian Journal of Surgery: Official Publication of the Nigerian Surgical Research Society*. 2013;19(2): 49-55. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3899548/> (accessed 11th April)
- 6) NICE (2014) Gallstone Disease: Diagnosis and Management of cholelithiasis, cholecystitis and choledocholithiasis. NICE clinical guideline 188. Available at <http://www.ncbi.nlm.nih.gov/books/NBK258747/pdf/TOC.pdf> (Full guideline)