

Challenges associated with Global Bariatric Medical Tourism

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Abstract

Background

Global bariatric healthcare entails travelling abroad to undergo surgery that precludes routine follow-up and continuity of care. We present four cases of complications associated with bariatric global tourism presenting acutely to a tertiary bariatric center.

Case Series

The first case is a 58-year-old male with BMI of 32.1kg/m² presenting with two-month history of persistent vomiting after undergoing insertion of an intra-gastric balloon (IGB) in Thailand. The second case is a 49-year-old female with BMI of 35.1kg/m² presenting with an acute abdomen secondary to gastric perforation 8-years post laparoscopic gastric band insertion in the Middle East. The third case is of a 53-year-old male with a BMI of 36.2kg/m² presenting with refractory indigestion due to IGB insertion 1 year ago in Prague. The fourth case is a 47-year-old female with a BMI of 58.3kg/m² who presented with an anastomotic leak at day-5 post Roux-en-Y gastric bypass performed in Turkey.

Outcomes

All patient underwent surgical intervention including reversal of the index bariatric procedure.

Discussion

Global bariatric surgery is associated with significant risk of complications without appropriate post-operative care. The management of such complications carries a significant burden to the Irish healthcare system thereby requiring regulations in order to control such post-operative complications.

Introduction

Obesity is a growing pandemic in Ireland, with an estimated 6 out of 10 adults deemed overweight or obese¹. Obesity is a significant contributor to morbidity and mortality as it is a major risk factor for the development of conditions such as type 2 diabetes mellitus, cardiovascular events, cancer, and chronic conditions such as osteoarthritis, renal disease, and obstructive sleep apnoea. Moreover, the annual cost to the healthcare system of Irish adult obesity is estimated to be €1.3 billion of which €400 million is attributed directly to healthcare cost². Non-operative management options² such as lifestyle modification and weight-lowering drugs such as Orlistat and Liraglutide have been unsuccessful in reducing weight over time³⁻⁵. Bariatric surgical procedures are the only treatment modality that have shown sustained long term weight loss results to^{date 6-7}.

Due to the overall lack of bariatric resources in Ireland only 1 in 100,000 people per annum undergo bariatric surgery⁸. Bariatric procedures are currently only offered to patients who have failed non-surgical measures and have a consistent Body Mass Index (BMI) of greater than 40 kg/m² or BMI of 35 to 40 kg/m² with a comorbidity. Currently bariatric procedures are only offered in two public hospitals in Dublin and Galway. The high demand for such procedures has led to long waiting times as evidenced by figures published by the Health Service Executive (HSE) where only 154 bariatric procedures were performed in 2020, a drop from 169 from the previous year, amounting to €1.3 million to the HSE. It is estimated that a total of €5.7 million was spent on bariatric procedure over the last five years², with one of the biggest barriers to offering greater number of bariatric operating being the availability of adequate funding⁹.

Medical tourism is the practice of traveling across international borders to access healthcare systems or physician services that are not available or less attractive in a person's native country. Factors such as local availability of procedures, high costs, long wait-times, availability of relatively inexpensive worldwide travel, and increasing number of countries catering to medical tourism have played a significant role in the expanding medical tourism industry¹⁰.

Due to the very significant waiting time (up to 6 years), this practice has become very popular amongst patients. However, due to interruptions in the continuity of care and lack of follow-up, patients are at risk of suffering complications upon returning to their home country, which poses a significant financial burden to the public health care system. The objective of this case series is

to highlight the financial burden on the HSE and assess the challenges and complications associated with such global bariatric tourism.

Case 1

A 58-year-old male presented to the emergency department with persistent and progressive vomiting for five weeks after undergoing insertion of an intra-gastric balloon (Spatz3), Spatz FGIA, Inc. in Thailand. The patient's past medical history was significant for hypertension managed by 40mg Telmisartan OD and a BMI of 32.1 kg/m² having lost 22 kg since the insertion of the balloon. He was a non-smoker with occasional drinking habits.

On physical examination, the patient was haemodynamically stable with normal abdominal examination. All blood tests were within normal limits. A plain film of the abdomen (PFA) was suggestive of the balloon obstructing the gastric outlet. Computerised tomography (CT) scan further delineated the anatomy and the location of the balloon's tie-off. A trial of conservative management with oral fluids was attempted with the goal of mobilising the balloon back from the gastric outlet. Unfortunately, this was unsuccessful after eight days and the patient underwent an emergency gastroscopy under general anaesthesia to remove the gastric balloon. He made an uneventful post-operative recovery and was discharged home with follow-up review as outpatient

Case 2

A 49-year-old lady was transferred to our Bariatric Centre from another institution with epigastric pain radiating to left shoulder and left iliac fossa with multiple episodes of vomiting. On examination, the patient was tender in the epigastrium and left upper quadrant with associated signs of peritonism. Laboratory tests demonstrated C-reactive Protein 314 mg/L, WBC 14.0x10⁹/L, Neutrophils 10.70 x10⁹/L, HB 10.9 g/dl, lactate 0.7mmol/L. She had undergone laparoscopic gastric banding 8 years ago in Dubai. CT thorax and abdomen demonstrated visceral perforation at the oesophago-gastric junction with a 10cm collection with a prominent air-fluid level within the lesser sac displacing the stomach anteriorly consistent with an abscess. The patient underwent radiologic-guided drainage of the abscess. An Oesophagogastroduodenoscopy (OGD) was performed at a later date that demonstrated the area of gastric perforation had since healed and the gastric band was intact. As the patient had continued signs and symptoms of abdominal pain she was electively admitted for laparoscopic removal of gastric band with a BMI of 35.1 kg/m². She was discharged the next day.

Case 3

A 53-year-old man with a BMI of 36.2 kg/m² was referred to our centre after having undergone an IGB in Prague. The patient had the IGB for over 12 months that failed to lose weight. It had been causing significant indigestion refractory to medical management. He was scheduled for removal of the balloon; however, due to COVID-19 travel restrictions he was unable to undergo this procedure. He was admitted to our centre as a day case to remove the gastric balloon endoscopically. His post-operative course was uneventful.

Case 4

A 47-year-old female patient with BMI 58.3kg/m² presented to an outside institution with abdominal pain and pyrexia 8 days after undergoing a gastric bypass in Turkey. Upon returning to Ireland 5 days after the surgery, she gradually developed sharp pain in the right upper quadrant associated with dyspnoea and oxygen level dropped to 92%. Physical examination elicited tenderness at the epigastrium and left upper quadrant. Laboratory tests showed CRP 171.63 mg/L and WBC 8.85x 10⁹/L, Hb 11.1g/dl CTPA excluded pulmonary embolism and CT demonstrated a contained gastric perforation with 5.1 x 9 cm air-fluid containing collection along the greater curvature of the stomach with an additional 4.5cm collection in the left paracolic gutter. She was transferred to our centre after being actively resuscitated with IV fluids and antibiotics (piperacillin/ tazobactam 4.5 mg TDS and Metronidazole 500mg TDS). Total parenteral nutrition (TPN) was commenced and an interval CT one week later demonstrated a stable unresolved collection. She underwent OGD which confirmed an anastomotic leak at the suture line which was subsequently managed by placement of an endoscopic clip under general anaesthesia. She made a rapid recovery thereafter and was discharge home 2 weeks from admission and is to be followed up in Bariatric outpatient's clinic.

Discussion

The limited access to timely bariatric service in Ireland has led to significant waiting times¹¹. Cheaper weight loss procedures in certain parts of the world have incentivised patients to seek bariatric surgery abroad. There are multiple challenges associated with global bariatric tourism. Firstly, patients do not have access to adequate information regarding the bariatric procedure and they resort to informal blogs to access this information¹² resulting in patients to

underestimate the risks associated with bariatric surgery and believe that their surgeries will be complication-free¹³. In order to avoid this, the HSE has a Treatment Abroad Scheme (TAS) where consultants can refer patients for procedures in the European Union, European Economic area or Switzerland if the procedure is not available in Ireland or cannot be accessed within a timely fashion¹⁴. The referrals will have more credibility as the consultants will have to research the accreditation, qualifications, morbidity and mortality data before referring patients¹⁵. The question is whether surgeons will have the time to accommodate this ancillary work in their current busy practice.

During the COVID-19 pandemic, new challenges have emerged in dealing with medical tourism. Primarily, given that some of the bariatric procedures are temporary weight loss measures, leaving them for longer than intended duration would increase the risks of complications including erosion, migration, small bowel obstructions, leakage and intra-abdominal collections. With the travel bans imposed due to COVID-19 pandemic, it is more likely that these patients would not have an opportunity to reverse these procedures in a timely manner.

In the current case series, we have highlighted two temporary bariatric surgical procedures, laparoscopic adjustable gastric banding (LAGB) and intra-gastric balloon (IGB). In addition to a longer-term bariatric surgery which is the gastric bypass. LAGB is referred to a minimally invasive weight loss procedure in which a prosthetic band is temporarily inserted around the gastric outlet during a laparoscopic surgery. The band is attached to a saline-infusion port that is situated in the subcutaneous tissue allowing easy access to adjust the diameter of the band and increase degree of restriction¹⁶. While this has become an uncommon practice in Ireland due to complications rate and sub-optimal long-term results, patients are still undergoing this procedure abroad. The IGB is a temporary weight loss measure, involving the insertion of a balloon into the stomach promoting a feeling of satiety and restriction. Complications include vomiting, nausea, and acid reflux as well as more serious and potentially fatal events such as migration into the small bowel causing obstruction, gastric outlet obstruction, gastric perforation, and bleeding ulcer¹⁷.

On the other hand, Roux-en-Y gastric bypass (RYGB) is referred to as volume and absorption restrictive surgery in which a small gastric pouch is created and anastomosed to the roux limb of the jejunum bypassing a segment of small bowel (75-150 cm). While this procedure is considered one of the most commonly performed bariatric procedure with excellent long-term weight-loss results, early and late complications have been reported including gastric remnant distension which could lead to rupture, spillage of massive gastric contents, and peritonitis. Other complications include stoma stenosis, internal hernia leading to bowel obstruction, and intussusception. Metabolic and nutritional derangement are also common¹⁸⁻¹⁹.

These complications come with a significant cost to the public health system. We have estimated the cost for each of the cases by using the HSE inpatient and outpatient costings for these patients ²⁰. The costs reported as per the Financial Department have been adjusted to represent the inflation rate using the consumer price index (CPI) inflation calculator ²¹. (Table 1)

When complications arise, the cost is borne by the HSE. The cost for each patient's case is outlined in table 1. Abdominal radiography, CT images, OGD, hospital stay are factored in while calculating the financial burden ^{20, 22-23}. As per the tables below, the cost of managing these patients ranged between €3,296.76 and €18,219.15 with an average cost of €12,055.0975 for the public health system. This excluded outpatient and emergency department cost. As a consequence of medical tourism, the patients must undergo multiple scans and laparoscopic/endoscopic procedures to manage the complications and the cost for treating this population was higher than treating local patients ²⁴.

Additionally, surgeons are not well prepared for this extra work-load due to limited theatre access (which may have contributed to the need for medical tourism) as well as lack of familiarity and clarity about the procedures performed. Moreover, the COVID-19 pandemic has prevented patients travel to receive follow up after the procedure, giving rise to more potential post-operative complications.

Currently there is no national bariatric registry that captures data pertaining to Irish medical tourists which can lead to lack of appropriate follow-up. It would be helpful if formal registration for those patients including the time and location where the surgery took place, the performing surgeon and their contact number, dates of expected follow-up, emergency plans, and most importantly data regarding the details of the weight-loss equipment used as this would potentially improve patient outcomes when dealing with complications. Importantly, it will also aid in estimating the annual cost of bariatric medical tourism to the HSE.

Table 1: An estimate of the cost for the three cases [21-22]

Event	Cost (Euro)
Case 1	
PFA	71.76
CXR	71.76

CT	175.76
Gastroscopy	2,818
Bed cost x 10 nights	8,130 (multi-occupant room)
Totally cost (Euros)	11,267
Case 2	
CT x 2	351.72
CXR	71.76
IR drainage	319.67
Gastroscopy	2,818
Laparoscopy and removal of band	8,560
Bed cost (all admission) x 7nightsx 1 day ward	6,098
Total Cost (Euros)	18,219.15
Case 3	
CXR	71.76
Gastroscopy	2,818
Day admission	407
Total (Euros)	3,296.76
Case 4	
CTx2	351.72
CXR	71.76
Gastroscopy	2,818

Bed cost	12,196
Total (Euros)	15,437.48

Global bariatric procedures can carry a significant risk of complications if appropriate post-operative care is not accessible. Managing these complications have been a huge burden on an already under-resourced healthcare system. This requires stricter regulations with appropriate patient education and follow-up. Having a registry of patients who have bariatric procedures elsewhere will ensure appropriate care post-operatively and facilitate dealing with post-operative complications if arise.

Declarations of Conflicts of Interest:

None declared.

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