



ENDOBARRIER MIGRATION CAUSING SMALL BOWEL PERFORATION; SURGICAL MANAGEMENT VS NON INVASIVE DEVICES FOR MANAGEMENT OF OBESITY AND TYPE 2 DIABETES


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ABSTRACT

A 50yo male with known type 2 diabetes, who is otherwise well, presented with sudden onset of severe generalised abdominal pain. CT abdomen revealed chronic small bowel thickening and a possible small bowel perforation secondary to a foreign body, most likely being the endobarrier device. The patient underwent a diagnostic laparoscopy which was converted to laparotomy for removal of foreign body and small bowel reconstruction. The patient recovered uneventfully and was discharged home day 4 post operatively.

Key words: Endobarrier, Gastrointestinal liner, Endoluminal liner, Small bowel, Perforation.

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INTRODUCTION

The endobarrier was introduced as a less invasive weight loss device to help treat obesity and reverse type 2 diabetes when implanted and removed for 1 year. The EndoBarrier is a fluoropolymer sleeve that is reversibly fixated endoscopically to the duodenal bulb and extends 80 cm into the small bowel, usually terminating in the proximal jejunum [1,2]. This endoscopically inserted device aids weight loss through mal-absorption and activating hormonal triggers [1,2] and was initially developed and trialled in 2007 [2]. Initially several studies and case reviews showed promising results. Early removal of the endobarrier device due to stent migration has been a

previously reported complication [4-6]. There are no previous reported perforations due to device migration, however, this was an assumed possible complication. Here we will discuss a mostly healthy gentleman who sustained a small bowel perforation due to migration of his endoscopically inserted barrier device 11 months after it was inserted. A small bowel perforation was confirmed with an oral contrast abdominal CT.

CASE REPORT

A 50 yo gentleman with type 1 diabetes presented to the emergency department complaining of a sudden onset of a abdominal pain and discomfort associated with a low grade fever. On examination, the patient had generalised abdominal pain, however, was not peritonitic with a biochemical profile showing a wcc of 23.2 on admission. An abdominal Computerized tomography (CT) was performed confirming the patient had chronically

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thickened small bowel and sustained a small bowel perforation secondary to a foreign body (Figures 1 & 2). Subsequently the patient underwent a diagnostic laparoscopy which was converted to laparotomy for better surgical access. Intraoperatively it was noted that the patient had four quadrant purulent peritonitis with pus and the endobarrier device had migrated to the mid-jejunum with a localised perforation (Figure 3). There was chronically dilated and obstructed small bowel secondary

to a foreign body (endobarrier device). The endobarrier device was removed through a small bowel enterotomy which was then primarily closed with 3/0 PDS (Figures 4 & 5). The patient required 2x15F Blakes drains to remain in the pelvis and left paracolic gutter and IV antibiotics for 5 days. The patient made an uneventful recovery and was discharged day 5 post operatively.

Fig 1. CT abdomen (Axial view)



Fig 2. CT abdomen (Coronal view)

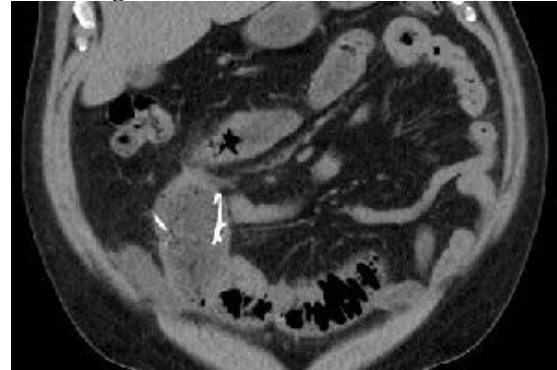


Fig 3. Localised small bowel perforation



Fig 4. Small bowel enterotomy to deliver device



Fig 5. Endobarrier device removed from small bowel



DISCUSSION

Initially the endobarrier device was found to be a safe, less invasive method of managing obesity and diabetes. However in late 2014, a restriction of use of this product was issued, and then the endobarrier device was later banned in 2016 [13].

Even though with initial studies providing evidence of efficacy for this product, the group sample

sizes were not large enough for results to be significant. Furthermore, there is no research on long term outcomes of the device beyond 1 year [6, 8-10], however there are several reported complications requiring early removal of the device for complications such as pain, migration and obstructions.

At present it safe to assume that we can not yet mimic surgical weight loss efficacy with less invasive therapies such as endobarrier devices [11].

CONCLUSION

Endobarrier devices for management of weight loss and type 2 diabetes have become obsolete due to new found surgical cases of severe complications. The most common complications that were noted were pain, device migration, bowel obstruction and now small bowel perforation [12]. It is still widely accepted that bariatric surgery for management of obesity and type 2 diabetes is still the preferred gold standard of treatment.

CONFLICTS OF INTEREST

No conflicts of interest to declare.

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AUTHOR CONTRIBUTIONS

Dr. R. Khan for initiating surgical case and providing valuable literature and reading material.

CONSENT

Formal consent from the patient was obtained to publish this de-identified case report.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the, ethical standards of the institutional research committee and with the 1964, Helsinki declaration and its later amendments or comparable ethical, standards. This article does not contain any studies with animals performed by any of the authors.

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