

Laparoscopy is a safe option in selected small bowel obstructions: A case report

Amin Tanveer, Mikhail Fisher

ABSTRACT

Traditionally, exploratory laparotomy has been the mainstay of treatment for patients requiring surgery in the emergency setting; however with increased benefits of laparoscopic approach, surgeons are more tempted to use laparoscopy in the emergency setting also. A 51-year-old man presented to the emergency department with acute abdominal pain secondary to small bowel obstruction by a foreign body. The patient underwent a laparoscopic operation and removal of foreign body by a small enterotomy without any complications and made a good recovery. This case and review of literature demonstrates that laparoscopic approach is a feasible option for treatment and diagnosis of selected small bowel obstructions.

Keywords: Ingestion of foreign body, Laparoscopic approach, Small bowel obstruction

How to cite this article

Tanveer A, Fisher M. Laparoscopy is a safe option in selected small bowel obstructions: A case report. Case Rep Int 2018;7:100046Z06AT2018.

Amin Tanveer¹, Mikhail Fisher²

Affiliations: ¹Surgical Registrar, Department of General Surgery, Peninsula Health PO Box 52, 2 Hastings Road, Frankston, Victoria, Australia; ²Consultant General Surgeon, Department of General Surgery, Peninsula Health PO Box 52, 2 Hastings Road, Frankston, Victoria, Australia.

Corresponding Author: Amin Tanveer, Department of General Surgery, Peninsula Health PO Box 52, 2 Hastings Road, Frankston, Victoria, Australia, Frankston, Melbourne, Victoria, Australia, 3199; Email: amintanveer@hotmail.com

Received: 24 February 2018

Accepted: 06 March 2018

Published: 12 March 2018

Article ID: 100046Z06AT2018

doi: 10.5348/100046Z06AT2018CR

INTRODUCTION

Small bowel obstruction (SBO) is a common surgical presentation, the most common cause being adhesions 60%, and other causes include hernia 15%, neoplasm 6%, inflammatory causes 5%, mesenteric vascular occlusions 5%, intussusception 3%, and unusual aetiology 6% [1].

There are various options for treatment of SBO depending on the cause and the patient's clinical status, e.g. conservative or surgical management, open versus laparoscopic approach. The appropriate surgical intervention depends on the underlying pathology, the patient's clinical status and the surgeon's preference and skill.

Foreign bodies causing small bowel obstruction commonly encountered by the surgeons, most of the objects once passed the pylorus are easily passed through the rest of the gastrointestinal tract, but complications such as impaction, perforation may rarely occur. Only 1% of these will finally need surgical intervention [2, 3].

CASE REPORT

A 51-year-old man presented to the emergency department with acute abdominal pain, abdominal distension, nausea, vomiting, and obstipation for twelve hours. His past medical and surgical history included acute myocardial infarction with triple bypass surgery, and open appendicectomy. He is a smoker and has a body mass index of 40.

On examination, his vital signs were stable; on abdominal examination he had generalised abdominal tenderness but no signs of peritonitis. His blood tests revealed haemoglobin 181 g/L, white cell counts 12.1, Neutrophil 10.4, and rest of his blood tests were

unremarkable. A small bowel obstruction likely due to adhesions and congested mesentery were reported on his abdominal CT scan (Figure 1).

He was initially treated conservatively for approximately twelve hours with no improvement. Then a decision for a laparoscopic surgical intervention was made. On laparoscopy there was copious amount of serous fluid in the abdominal cavity and dilated small bowel with transition point 30 centimeters from the terminal ileum (Figure 2). The entire small bowel was inspected from the terminal ileum to duodenojejunal junction, and no other abnormality was detected. By using a grasper the small bowel was extricated through the umbilical port after enlarging the incision to 3 centimeters. He was found to have a small bowel obstruction secondary to a foreign body (Figure 3). The foreign body that was a piece of a carrot was removed through a small longitudinal incision along the bowel. The incision was repaired horizontally with 3/0 polydioxanone using a single layer interrupted sutures. Post-operatively, the patient started passing flatus on day two, opened his bowel on day three, and was discharged home on day four.

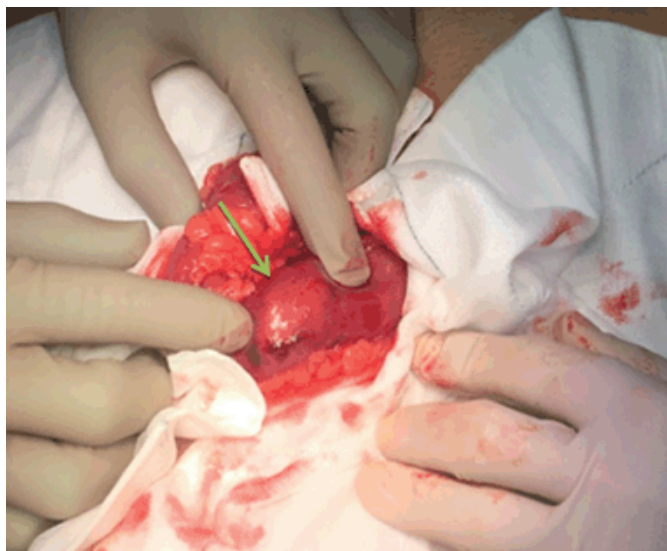


Figure 2: Intraoperative transition point of small bowel obstruction, hard palpable lump.

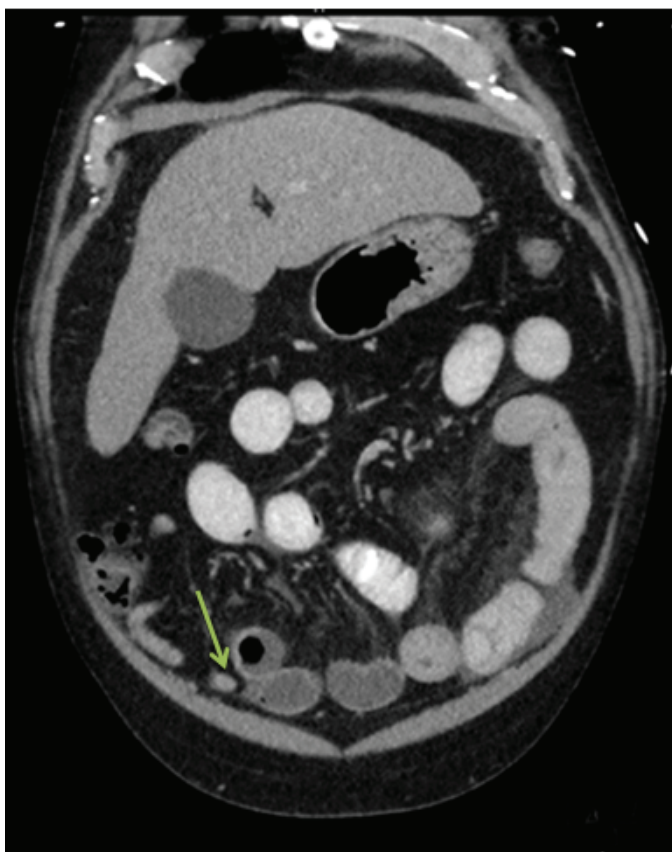


Figure 1: Computed Tomography scan showing transition of Small bowel obstruction with swirling of mesentery.



Figure 3: Foreign body that was a piece of carrot was removed.

DISCUSSION

Foreign body ingestion is a common incident mostly in children less than six years of age [4, 5], most of the objects once passed the pylorus are easily passed through

the rest of the gastrointestinal, but complications such as impaction and perforation may rarely occur. Only 1% of the cases will finally need surgical intervention [2, 3].

There are various options for treatment of SBO depending on the cause and the patient's clinical

status, e.g. conservative or surgical management, open versus laparoscopic approach. The appropriate surgical intervention depends on the underlying pathology, the patient's clinical status and the surgeon's preference and skill.

Traditionally, exploratory laparotomy has been the mainstay of treatment for patients requiring surgery in the emergency setting, but as laparoscopy has proven to be an effective approach in the management of most elective surgical conditions, being associated with a lower rate of morbidity and shorter hospitalisation, most surgeons are tempted towards laparoscopic approach as a first option in the emergency situations as well.

Laparoscopic approach is the preferred option in patients with a SBO that do not have extensive surgical history, clinically do not have any signs of peritonitis, not expected to have any malignancy causing SBO and suspected cause of SBO likely due to band adhesion. Yao et al, demonstrated that the laparoscopic approach can be safe and effective, particularly in patients with isolated bands, simple enteral angulation, tumours and foreign bodies [6]. In our case, we chose the laparoscopic approach as our first option after failed conservative management. Our patient's only surgical history was an open appendectomy and we suspected band adhesion to be the cause of SBO. He had a high BMI; the surgeon prefers laparoscopic approach in obese SBO patients with minimal surgical history.

Multiple studies demonstrated a range of success rates in laparoscopic management of acute small bowel obstruction. Ghosheh and Salameh [7]; pooled analysis of the literature shows that laparoscopic management of SBO is successful in 66% of the cases.

Incidence of post-operative complications, length of hospital stay and cost reduces in selected laparoscopic approach SBO patients as per Mancini et al. [8].

Wiggins et al. [9], reported in comparative studies that Laparoscopic surgery was associated with a significant reduction in mortality, overall morbidity, pneumonia, wound infection and length of hospital stay, however, the rates of bowel injury and re-operation were not significantly different.

Sajid et al. [10] revealed that laparoscopic adhesiolysis reduced the risk of morbidity, mortality, surgical infections, and hospital stay; however, the operative time and the incidence of iatrogenic enterotomy were not reduced.

Despite these available reports, surgeons have been reluctant to use laparoscopy in the management of small bowel obstruction, regardless of its aetiology. And the reasons for this reluctance are risk of injury to the distended vulnerable bowel, technical difficulties and poor visualisation of the site of obstruction [7].

Cirrochi et al. [11] concluded that there are no published randomized controlled trials or prospective controlled clinical trials to explain feasibility and efficacy of laparoscopy compared with laparotomy. Large randomized clinical trials are required to make

laparoscopic approach a standard of care in selective small bowel obstructions.

CONCLUSION

Laparoscopic surgery for SBO can be safely performed in selected patients, foreign body and band adhesions.

REFERENCES

1. Lohn JW, Austin RC, Winslet MC. Unusual causes of small-bowel obstruction. *J R Soc Med* 2000 Jul;93(7):365–8.
2. Maleki M, Evans WE. Foreign-body perforation of the intestinal tract: Report of 12 cases and review of the literature. *Arch Surg* 1970 Oct;101(4):475–7.
3. McPherson RC, Karlan M, Williams RD. Foreign body perforation of the intestinal tract. *Am J Surg* 1957 Oct;94(4):564–6.
4. Webb WA. Management of foreign bodies of the upper gastrointestinal tract: Update. *Gastrointest Endosc* 1995 Jan;41(1):39–51.
5. Cheng W, Tam PK. Foreign-body ingestion in children: Experience with 1,265 cases. *J Pediatr Surg* 1999 Oct;34(10):1472–6.
6. Yao S, Tanaka E, Ikeda A, Murakami T, Okumoto T, Harada T. Outcomes of laparoscopic management of acute small bowel obstruction: A 7-year experience of 110 consecutive cases with various etiologies. *Surg Today* 2017 Apr;47(4):432–39.
7. Ghosheh B, Salameh JR. Laparoscopic approach to acute small bowel obstruction: Review of 1061 cases. *Surg Endosc* 2007 Nov;21(11):1945–9.
8. Mancini GJ, Petroski GF, Lin WC, Sporn E, Miedema BW, Thaler K. Nationwide impact of laparoscopic lysis of adhesions in the management of intestinal obstruction in the US. *J Am Coll Surg* 2008 Oct;207(4):520–6.
9. Wiggins T, Markar SR, Harris A. Laparoscopic adhesiolysis for acute small bowel obstruction: Systematic review and pooled analysis. *Surg Endosc* 2015 Dec;29(12):3432–42.
10. Sajid MS, Khawaja AH, Sains P, Singh KK, Baig MK. A systematic review comparing laparoscopic vs open adhesiolysis in patients with adhesional small bowel obstruction. *Am J Surg* 2016 Jul;212(1):138–50.
11. Cirocchi R, Abraha I, Farinella E, Montedori A, Sciannameo F. Laparoscopic versus open surgery in small bowel obstruction. *Cochrane Database Syst Rev* 2010 Feb 17;(2):CD007511.

Acknowledgements

I acknowledge Dr. Sara Tahsin my partner for helping in editing and reviewing the article.

Author Contributions

Amin Tanveer – Substantial contributions to conception and design, Acquisition of data, Analysis

and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Mikhail Fisher – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None

Consent Statement

Written informed consent was obtained from the patient for publication of this study.

Conflict of Interest

Authors declare no conflict of interest.

Copyright

© 2018 Amin Tanveer et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

Access full text article on
other devices



Access PDF of article on
other devices

