PanAfrican Medical Journal

Open Access

Case report

Is laparoscopy feasible and effective for acute postoperative small bowel obstruction in Africa? A case report in Yaoundé, Cameroon

Nana Oumarou Blondel[1, 2, &], Bang Guy Aristide[1], Guifo Marc Leroy[2, 3], Ngo Nonga Bernadette[2, 3], Essomba Arthur[2,3], Sosso Maurice Aurélien[2]

[1]Visceral and laparoscopic Surgery Unit, National Social Insurance Fund Health Center of Yaoundé, Cameroon,[2]Department of Surgery, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Cameroon,[3]Yaoundé University Teaching Hospital, Cameroon

[&]Corresponding author: Nana Oumarou Blondel, Visceral and laparoscopic Surgery Unit, National Social Insurance Fund Health Center of Yaoundé, Cameroon

Key words: Adhesive small bowel obstruction, laparoscopic adhesiolysis, Africa

Received: 26/10/2015 - Accepted: 30/03/2016 - Published: 14/04/2016

Abstract

Laparoscopic management of acute adhesive small bowel obstruction has been shown to be feasible and advantageous. However, widespread acceptance and application is still not observed. We describe the case report of a 58-year-old male who presented with signs and symptoms of small bowel obstruction status twenty years after two consecutive open surgeries for complicated acute appendicitis. The patient underwent successfully a laparoscopic band lysis after failure of conservative management. This is the first report of laparoscopic management of adhesive small bowel obstruction in Cameroon. Laparoscopic adhesiolysis of acute adhesive small bowel obstruction is feasible and safe by skilled surgeons in selected patients even in developing countries.

Pan African Medical Journal. 2016; 23:178 doi:10.11604/pamj.2016.23.178.8279

This article is available online at: http://www.panafrican-med-journal.com/content/article/23/178/full/

Introduction

Small bowel obstruction (SBO) is a common cause of surgical admissions from a surgical emergency department, adhesions being the commonest etiology and are related to prior laparotomy [1]. The standard surgical approach to SBO has been laparotomy with the wisdom of the adage "never let the sun rise and set on a case of unrelieved intestinal obstruction". Despite numerous articles demonstrating the high success rate of laparoscopic management of acute SBO, the laparoscopic approach has not gained acceptance among most surgeons [2,3] and some of them still considered bowel dilatation and adhesions as exclusion criteria for laparoscopy. In Africa, fewer studies are available on this subject [4,5] and none in Cameroon in particular. We report a case of a 58-year-old male who presented with signs and symptoms of postoperative SBO managed successfully by laparoscopic lysis.

Patient and observation

A 58-year-old male had presented to the emergency department of the National Social Insurance Fund health center of Yaounde, with one day of vomiting, abdominal pain and distension. The patient's past medical history was significant for two open laparotomies twenty years before when he presented with an acute appendicitis. He was managed firstly by a Mc Burney appendicectomy complicated five days later by an enterocutaneous fistula which required a midline open laparotomy. Unfortunately, findings and operative procedure were not recorded. Upon admission, the patient passed gas, had a normal temperature with a normal white blood cell count (4,300). An abdominal X-ray (Figure 1) and CT-scan (Figure 2) were performed and consistent with small bowel obstruction. A conservative management was decided. The patient was admitted to the visceral and laparoscopic surgery unit and observed overnight with a nasogastric tube, IV fluid hydratation and serial examination. His clinical picture improved. The nasogastric tube was removed and after 48 hours with progressive liquid diet and the patient was discharge 2 days later without any complain. 4 days after discharge, he had been readmitted for the same symptoms. It was then decided to take him for exploration and a laparoscopic approach was selected. The exploratory laparoscopy was performed with patient under general anesthesia and by using one 10mm supra-umbilical port implemented by "open-coelioscopy", and two 5mm hypogastric and right hypochondrium ports inserted under sight supervision (Figure 3). Upon entry into the abdomen, a small amount of serohematic ascetic fluid was seen in right iliac fossa. The table was then tilted to the left and in Trendelenbourg position. Gentle running of the intestine revealed a single band between the parietal peritoneum of the right iliac fossa and the mesentery, which had trapped a segment of the small bowel underneath (Figure 4). A "transition zone" was clearly identified in this place. The band was lysed by scissors (Figure 5). No signs of bowel compromise were noted (Figure 6). The abdomen was desufflated and closed in the usual fashion. The length of the surgery was 22 min. The rest of hospital course was benign. The nasogastric tube was removed at the end of the surgery and a liquid diet started on postoperative-day one. The following day, the patient had a return of bowel function, advanced to regular diet and was ultimately discharged home. At the subsequent outpatient follow-up visit, the patient was tolerating regular diet without difficulty.

Discussion

It has been reported that up to 16% of admissions from an emergency surgical department are due to bowel obstruction [6]. Adherential pathology represents 80% of SBO [1] and are generally associated with prior laparotomy. About 50% of patients with acute SBO have a single band as etiology [7]. The standard surgical approach to acute SBO has been laparotomy, even in developing countries; of 9,619 SBO operated in USA from 2005 to 2010 only 14,9% adhesiolysis were performed laparoscopically [5]. To determine the site of obstruction, a large incision is usually required. Postoperatively, these patients suffer from pain of laparotomy, have a significant ileus and high incidence of cardiorespiratory complications [5]. In addition, there is the risk of new adhesions being caused by the laparotomy designed to release them [2]. We don't need to demonstrates that patients that undergo a laparoscopic approach fair better than those that undergo an open approach with no higher incidence of complications, this information is already evident in the published literature [2,3,8]. Despite these numerous articles demonstrating the high success rate of laparoscopic management of SBO, the laparoscopic approach has not gained acceptance among most surgeons. Possible reasons include: cost issues(particularly in Africa), operating room logistic issues, fear of having to convert to open, concern with distended bowel, iatrogenic injury, misconceptions, skepticism that benefits outweigh risks and lack of training and experience. Basic technical needs for performing laparoscopic adhesiolysis are good surgical skills, the "open-laparoscopy" approach and the possibility to move the operating table in different positions in order to point out the adherences. Another important point is an accurate selection of patients with SBO to performed laparoscopy. We disagree with LUJAN [3] who suggest that laparoscopy should be attempted first in all patients with SBO and less emphasis should be placed in the fear of conversion. We agree with FARINELLA [9] that performing an accurate selection of obstructed patients is essential in order to avoid an increase in morbidity due to laparotomy conversions. They define predictive factors for successful laparoscopic adhesiolysis (Table 1) and absolute and relative contraindications to laparoscopic adhesiolysis (Table 2). It's these criteria we tried to follow for the selection of our case since our patients have 6 successful predictive factors over 7. After this case, we conducted 3 others laparoscopic adhesiolysis (not reported) and hope to establish a serie in following years. The achievement of this procedure allowed us to overcome "the fear" to conduct laparoscopic approach in case of acute adhesive SBO. Since fewer series have been reported in Africa and none report in Cameroon in particular before this one, we strongly encourage our colleagues to incorporate laparoscopy into the algorithm of these patients. The feasibility of diagnostic laparoscopy vary between 60-100% while that of therapeutic laparoscopy is between 40-80% [9], and laparoscopy reduces de novo adhesion formation but has no efficacy in reducing adhesion reformation after adhesiolysis [10]. Several situations could lead to a conversion to the open procedure: multiples dense adhesions, difficult exposition and treatment of band adhesions, presence of bowel necrosis and accidental enterotomies.

Conclusion

Any surgeon who has performed a standard midline incision to release a single adhesive band, regrets that the same operation could have been performed laparoscopically [5]. Laparoscopic adhesiolysis in adhesive small bowel obstruction is feasible and effective in our milieu by skilled laparoscopic surgeons in proper

selected patients. We encourage our colleagues to practice this approach.

Competing interests

The authors declare no competing interests

Authors' contributions

All persons designated as authors above, qualify for authorship, they took active part in the management of this patient and write up pf this manuscript. All authors have read and agreed to the final manuscript.

Tables and figures

Table 1: Predictive factors for successful laparoscopic adhesiolysis
Table 2: Absolute and relative contra-indications to laparoscopic adhesiolysis
Figure 1: Abdominal X-Ray
Figure 2: Abdominal CT-Scan
Figure 3: Position of ports
Figure 4: Adhesive band in right iliac fossa
Figure 5: Laparoscopic adhesiolysis
Figure 6: Transition zone after band lysis without bowel compromise

References

1. Gutt CN, Oniu T, Schemmer P, Mehrabi A, Buchler MW. Fewer adhesions induced by laparoscopic surgery? Surg Endosc. 2004; 18(6): 1202-07. **PubMed** | **Google Scholar**
2. Adams S, Wilson T, Brown AR. Laparoscopic management of acute small bowel obstruction. Aust N Z J Surg. 1993; 63(1): 39-41. **PubMed** | **Google Scholar**
3. Lujan HJ, Oren A, Plasencia G et al. Laparoscopic management as the initial treatment of acute small bowel obstruction. JSLS. 2006; 10(4): 466-472. **PubMed** | **Google Scholar**
4. Ray-Offor E, Okoro P, Gbobo I, Allison A. Pilot study on laparoscopic surgery in port-harcout, Nigeria. Niger J surg. 2014; 20(1): 23-5. **PubMed** | **Google Scholar**
5. El Dahha AA, Shawkat AM, Bakr AA. Laparoscopic adhesiolysis in acute small bowel obstruction: a preliminary experience. JSLS. 1999; 3(2): 131-5. **PubMed** | **Google Scholar**
6. Maglinte D, Hettkamp DE, Howard TJ, Kelvin FM, Lappas JC. Currents concepts in imaging of small bowel obstruction. Radiol Clin North Am.2003; 41(2): 263-283. **PubMed** | **Google Scholar**
7. Chopra R, Mcvay C, Phillips E, Khalili TM. Laparoscopic lysis of adhesions. Am Surg. 2003; 69 (11): 966-968.**PubMed** | **Google Scholar**
8. Kelly KN, Iannuzzi JC, Rickles AS et al. Laparotomy for small-bowel obstruction: first choice or last report for adhesiolysis? A laparoscopic approach for small-bowel obstruction reduces 30-day complications. Surg endosc. 2014; 28(1): 65-73. **PubMed** | **Google Scholar**
9. Wjes, Farinella E, Cirocchi R, La Mura F et al. 200www.wjes.org/content/4/1/3. **Google Scholar**
10. Mais V. Peritoneal adhesions after laparoscopic gastrointestinal surgery. World J Gastroenterol. 2014; 20(17): 4917-4925. **PubMed** | **Google Scholar**

Table 1: predictive factors for successful laparoscopic adhesiolysis [9]
Number of previous laparotomies ≤ 2
Non-median previous laparotomy
Appendicectomy as previous surgical treatment causing adherences
Unique band adhesion as pathogenic mechanism of small bowel obstruction
Early laparoscopic management within the 24 hours from the onset of symptoms
No signs of peritonitis on physical examination
Experience of the surgeon

Table 2: absolute and relative contraindications to laparoscopic adhesiolysis [9]	
absolute contraindications	**relative contraindication**
Abdominal film showing a remarkable dilatation (> 4 cm) of small	Numbers of previous laparotomies > 2
Signs of peritonitis on physical examination	Multiple adherences
Severe comorbidities: cardiovascular, respiratory and hemostatic	
Hemodynamic instability	

s**Figure 1**: Abdominal X-Ray

Figure 2: Abdominal CT-Scan

Figure 3: Position of ports

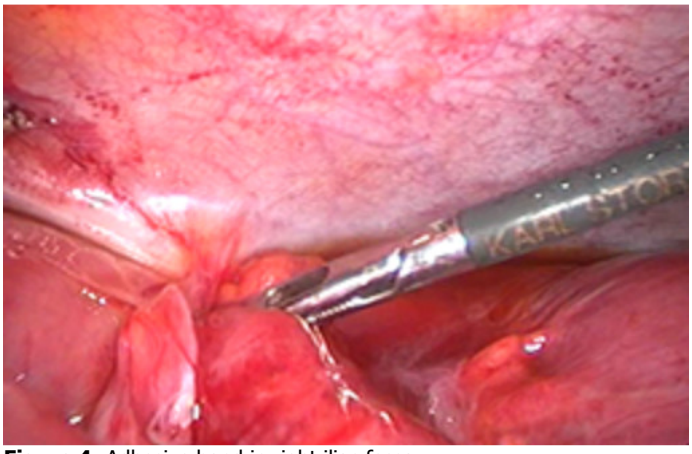

Figure 4: Adhesive band in right iliac fossa

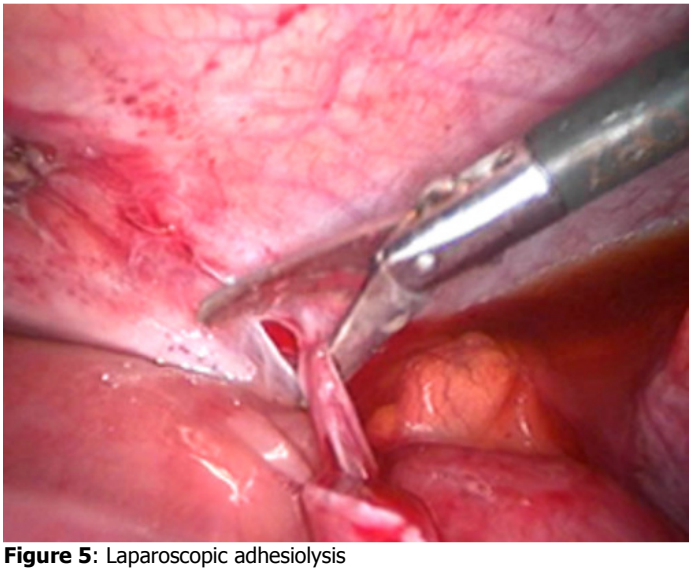

Figure 5: Laparoscopic adhesiolysis

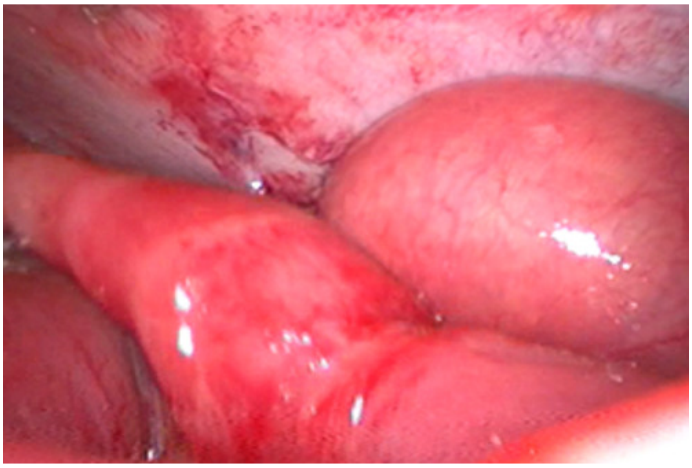

Figure 6: Transition zone after band lysis without bowel compromise