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Laparoscopic approach in a case of retroperitoneal and mesorectal haematoma following STARR procedure

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ABSTRACT

INTRODUCTION: Stapled transanal rectal resection (STARR) is a widely accepted procedure for treatment of obstructed defecation syndrome.**PRESENTATION OF CASE:** We analyzed major bleeding following STARR and exposed our experience regarding its conservative management with particular attention about diagnostic and therapeutic aspects.**DISCUSSION:** A case by case discussion should be carried out and treatments should be driven by the features and the progression of the haematoma with regards to size, inflammatory signs or severe rectal obstruction.**CONCLUSION:** If a second surgical time and exploration is considered, laparoscopy should be an effective choice while laparotomy, stoma or rectal resection should be considered in those cases with strong suspicious of peritonitis and pelvic abscess.© 2014 The Authors. Published by Elsevier Ltd. on behalf of Surgical Associates Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

1. Introduction

Stapled transanal rectal resection (STARR) is a widely accepted technique with transanal approach for the treatment of obstructed defecation syndrome (ODS) due to rectocele or rectal prolapse. Literature has focused the attention on indications and outcome but a general view upon the management of postoperative complications has been discussed in few papers, mainly case reports.^{1,2}

We report our experience regarding the conservative management of postoperative major perirectal bleeding following STARR procedure.

2. Patient and methods

A 54-year-old woman was referred to our proctological outpatient clinic for chronic constipation and rectal minor bleeding. A full clinical examination and diagnostic assessment were carried out and an ODS was the final diagnosis. Colonoscopy excluded malignancies and other colonic diseases such as inflammatory bowel diseases. An imaging study was performed with Defecating MRI showing moderate rectocele and rectal prolapse. After failed conservative treatment patient was clinically reevaluated and STARR procedure proposed. Under spinal anesthesia, patient was placed in the Lloyd-Davis position and a proctological evaluation

was carried out with circular anal dilator (CAD) part of the set PPH-03 (Ethicon®); STARR was performed with the technical steps illustrated by Longo A. and other authors.^{3,4} Transanal haemostatic adsorbable gelatin sponge (Spongostan Anal) and foley catheter were placed into the rectum. At the end of surgery patient received a local anesthesia by infiltrating a Chirocaine 750 mg diluted within 20 cc of sodium chloride solution (0.9%). Local anesthesia was performed through infiltration of four quadrants around the anal verge and a pudendal nerves block was performed too. Postoperative analgesia was administered through an endovenous infusion of Paracetamol 1000 mg three times per day and ketorolac tromethamine 30 mg two times per day. In addition, Oxycodone 5 or 10 mg (oral) was used as painkiller in case of severe pain, over than 4 in the visual analog scale (VAS; 0 = no pain and 10 = maximum pain experienced). At the first postoperative day a haemochrome test showed a low blood level of haemoglobin, decreasing slowly from 12 g/dl to 7.5 g/dl in about 24 h without any hemodynamic dysfunction. The transanal catheter drained only some clots but the digital exploration of the anorectum suggested an extraluminal bleeding. Patient was submitted to an abdominal CT scan 24 h following surgery: a perirectal haematoma of 10 × 8 × 8 cm was demonstrated to involve the mesorectal space with an active spreading of contrast (Figs. 1 and 2). Hemodynamic parameters of the patient were stable and a conservative management was considered: (1) Blood transfusions (2 units); (2) Antibiotic therapy through and endovenous infusion of Metronidazole 400 mg three times per day and Cefazoline 1000 mg three times per day; (3) fasting and endovenous parenteral nutrition.

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Figs. 1 and 2. Abdominal CT scan showed a mesorectal haematoma (10 × 8 × 8 cm) with an active spreading of contrast (arrow) and rectal lumen completely displaced (*).

Blood exams were repeated showing stable values of haemoglobin even 5 days following surgery. Fever, pain and urinary retention were not observed. At the 7th postoperative day there were no signs of further bleeding and patient was stable so that a surgical exploration was considered: patient was operated on with laparoscopic approach. Abdominal exploration showed a bulging in the lateral perirectal spaces and a wide ecchymosis involving retroperitoneum and mesocolon due to the spreading of the blood from the mesorectum (Fig. 3). The perirectal spaces were opened, haematoma was evacuated and a drain placed. A second operative time was a transanal exploration with the patient in Lloyd-Davis position: a small leak was observed in the staple line so that a reinforcing hand-sewing was performed with a continuous absorbable suture. A transanal drain was placed in the rectum. Five days later patient was feeding and drains were removed because we did not observe fever or adverse events. Levels of haemoglobin and white blood cells were stable and patient was discharged at the 6th postoperative day after spontaneous defecation. Patient has been controlled at the outpatient clinic for the following 12 months and only a self-limited fecal urgency was complained in the first 2 months after surgery.

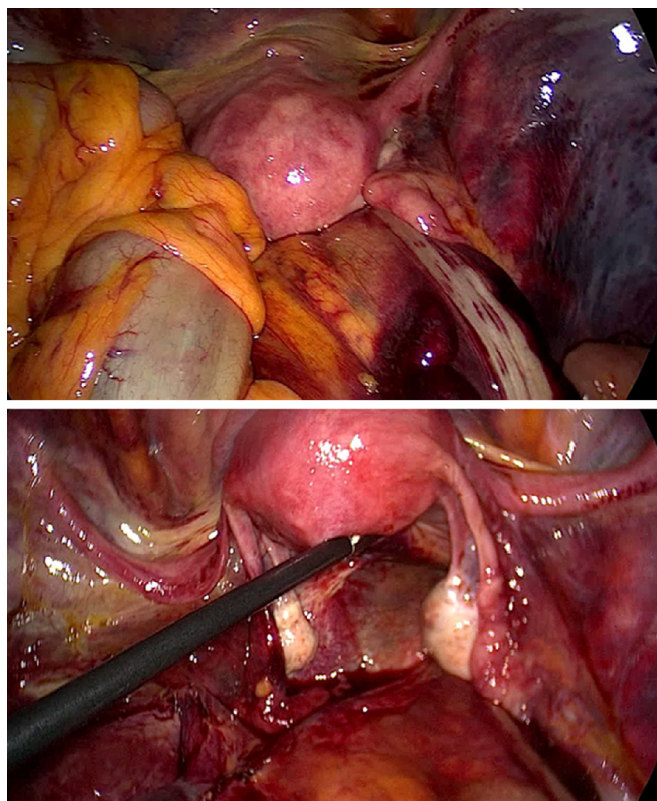


Fig. 3. Laparoscopic exploration showing the distribution of the haematoma.

3. Discussion

Staple surgery both for hemorrhoidal disease and obstructed defecation syndrome (ODS) is a relative young procedure, nowadays widely accepted and its complications are extensively known. Worldwide surgeons know that there is no surgery without potential minor or major complications. The interest of international literature about STARR and stapled hemorrhoidopexy (SH) has been very high in the recent past and potential postoperative morbidities have been widely criticized. Moreover, in 2005 the American Society of Colon and Rectal Surgeons underlined the rare occurrence of potentially devastating complications⁵ and in 2007 a first systematic review reported early and late outcome after SH or STARR.⁶ Compared to other procedures commonly performed in other surgical fields, such as laparoscopic cholecystectomy, STARR and SH have been always critically analyzed but in few cases suggestions regarding complications management have been proposed. Pescatori² in 2008 reviewed the adverse events after SH and STARR procedures in the international literature and discussed the management of these postoperative complications. Naldini¹ in 2009 reported a compendium of postoperative morbidities after SH and STARR. All Units of Coloproctology belonging to the Italian Unitary Society of Coloproctology (SIUCP) were asked by a questionnaire to return documentation of serious complications. In this multicenter paper about complications following staple transanal surgery, a total of 15 cases of major bleeding were reported and their management described. Transanal haemostatic suture, transperineal drainage, arterial embolism or transvaginal tamponade, even using a Sengstaken–Blackmore tube, represent the variety of treatment adopted. It is been suggested that unless bleeding is unstoppable or peritonitis is present, laparotomy should not be performed because this may result in further complications, including infection.¹

Moreover, with regard to postoperative rectal bleeding, in 2004 a large series (3000 patients) reported a readmission after SH

within two weeks in 5.6% of cases but only 0.4% required surgical hemostasis.⁷ Later, a multicentric study⁸ reported a postoperative bleeding after STARR in 11% of cases and this data was even lower (4.4%) in the European STARR Registry.⁹ Anyway, in the common practice we all know that bleeding after SH or STARR can be intraluminal or extraluminal into the pararectal space. In the latter case, blood can spread into the mesorectal space towards the retroperitoneal plane and hypothetically can reach to the lower mediastinum as just described in a case report of rectal perforation after SH.¹⁰ Reason of early postoperative bleeding is always a lack in closure of blood vessels mainly when the whole thickness of rectal wall filling the device is cut but not adequately squeezed by the stapling line,¹¹ while delayed bleeding may also be caused by a granuloma in 17% of cases¹² which may be surgically removed. In any case, the role of staple features has been widely discussed¹ in the “era” of PPH but currently after the developing of new staple devices this topic should be reconsidered in further comparison studies.

Regarding the diagnostic assessment, when extraluminal bleeding after SH/STARR is suspected, CT scan is commonly reported by several authors as the main imaging tool to understand the anatomical extension of a pararectal haematoma. Endoanal ultrasonography is limited to the first 10–12 cm from the anal verge so that the potential retroperitoneal blood spreading or free extraperitoneal air could not be investigated. In our presented case, even if we observed a clinically “self limiting” bleeding the CT scan showed an active bleeding with loss of contrast into the pararectal haematoma.

Postoperative bleeding as a complication following STARR procedure required reoperation in 2.7–11% of patients in other papers.^{2,8,12,13} As we learn in surgical practice, clinical progression and general evaluation are the main tools in the hand of physician so that our patient was asymptomatic, hemodynamically stable and blood levels of haemoglobin were stable for 5 days after transfusion of 2 blood units. In the international literature, conservative approach with observation and transfusions is reported^{1,14} as well as more aggressive treatment for example anterior rectal resection^{1,15} or bilateral ligation of internal iliac arteries.¹ In our case the management was conservative as a first line of treatment because patient was considered stable after blood transfusions. Following 5 days of stability, both abdominal laparoscopic and transanal exploration under general anesthesia were discussed and performed in order to drain the haematoma and reinforce the rectal suture line. The leakage of the suture line is a consequence of increasing pressure of the mesorectal haematoma so that sometimes we can also observe a spontaneous and complete transanal drainage. On the other hand, haematoma itself is a potential field of culture for bacterial infection and the risk of severe complication such as pelvic abscess or peritonitis should be always considered.¹⁶ Moreover, we avoided the only transanal or perineal drainage reported by other papers¹ because of the potential hazard of infection and a trans-abdominal approach was preferred. Other authors previously described the laparotomic approach not with

the intent of exploration; in our case, we believe that a laparoscopic exploration first assessed the real extent of the complication and then prevented its potential future risk. Haematoma spreading in the mesorectum, retroperitoneum and mesocolon, was drained because of the infectious risk and the bulging effect on the other organs mainly the rectum which was completely displaced and obstructed. As no other authors reported this approach after complicated SH/STARR, we strongly believe that laparoscopy should be always preferred as a gold standard for a first abdominal exploration: in case of further morbidities such as peritonitis or high rectal perforation laparotomic conversion could be evaluated as well as other aggressive surgical options just described by other authors. Otherwise, in well trained hand laparoscopy offers all the benefit of a mini-invasive approach and should be fit to our goal in terms of exploring, draining and placing a tube. With regards to the transanal synchronous exploration, we believe that it is mandatory in order to better explore the rectal staple line and reinforce the suture when a leak occurs due to the pressure of the pararectal haematoma. We recommend anorectal exploration because the integrity of the suture line is needed to prevent further complication such as pelvic abscess, peritonitis or Fournier gangrene as described in other case papers.

Serious complications occur for all surgical techniques as well as in other procedures performed to treat hemorrhoids and transanal stapling surgery is not an exception.^{1,17} In conclusion, when a major bleeding occurs after SH/STARR and patient is stable the extent of the haematoma should be staged with a CT-scan. In the following management, a case by case discussion is mandatory within the surgical equip and further treatments should be driven by the features and the progression of the haematoma with regards to size, inflammatory signs or severe rectal obstruction. If a second surgical time and exploration is considered, laparoscopy should be preferred taking into account its well known advantages. Laparotomy, stoma or rectal resection should be considered in those cases with strong suspicious of peritonitis and pelvic abscess.

Conflicts of interest

The authors report no conflicts of interest to report.

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Ethical approval

Not required.

Author contributions

All authors contributed equally to the present paper. Cerullo G. wrote the article and Martellucci J reviewed it before the submission.

Key learning points

- Management of complication after Anal Staple surgery.
- Bleeding after STARR procedure.
- Laparoscopic approach to Bleeding complications.

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