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Case Series

Case series: Incarcerated massive rectal prolapse successfully treated with Altemeier's procedure

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ABSTRACT

INTRODUCTION: Incarceration and necrosis of rectal prolapse is rare but when it occurs it requires urgent management. Perineal rectosigmoidectomy (Altemeier's procedure) may be a reasonable approach for the treatment of this condition. In some cases, a diverting stoma may be necessary.
METHODS: We report two cases of incarcerated massive rectal prolapse, one of which also manifested tissue necrosis, that were successfully treated with perineal rectosigmoidectomy. In one case a diverting colostomy was required. Both patients recovered uneventfully.
RESULTS: A literature review was performed to determine the optimal management of incarcerated and necrotic rectal prolapse, and to determine the indication for fecal diversion.
CONCLUSION: Perineal rectosigmoidectomy (Altemeier's procedure) can be utilized in emergency circumstances and, in our experience, the procedure was both safe and effective. The need for fecal diversion depends on the condition of the patient and the experience and judgement of the surgeon.

1. Introduction

Incarceration of rectal procidentia isa rare clinical occurrence. Reduction is often possible, however when unsuccessful, urgent surgery becomes necessary, and can be accomplished via either an abdominal or perineal approach. Necrosis of the prolapsed rectum can occur in advanced cases and in these situations, emergency resection is required. Depending on both the condition of the patient and the condition of the tissues, a temporary diverting colostomy or ileostomy may be necessary.

2. Methods

We report two cases of irreducible incarcerated rectal prolapse which required emergency surgery. This is a retrospective case series from a single institution. These were the only two cases of incarcerated rectal prolapse seen at our institution, which is a university teaching hospital. These patients were treated in 2015 and 2018, respectively. Both cases were treated with perineal rectosigmoidectomy and in one patient a colostomy was added. Both patients recovered uneventfully and there were no complications. In the patient who also had a diverting colostomy, the stoma was closed after one month and the patient had good bowel function and was fully continent. These two cases demonstrate the applicability of Altemeier's procedure for patients with incarcerated rectal prolapse, and demonstrate that it can be accomplished safely and without major complications, even in emergency situations. The use of fecal diversion depends upon the judgment and skill of the surgeon, as well as the severity of the patient's clinical status. The research registry number is NCT03643393. Approval was obtained from the hospital IRB. The research work has been reported in line with the PROCESS criteria [1].

3. Case reports

3.1. Case 1

A 69 year old male was referred to our hospital with incarceration of massive rectal prolapse. He described a mass protruding through the anal verge for 30 years, however the size of this mass increased gradually over time, until it became painful, swollen, and was completely irreducible (Fig. 1). He had no other med-

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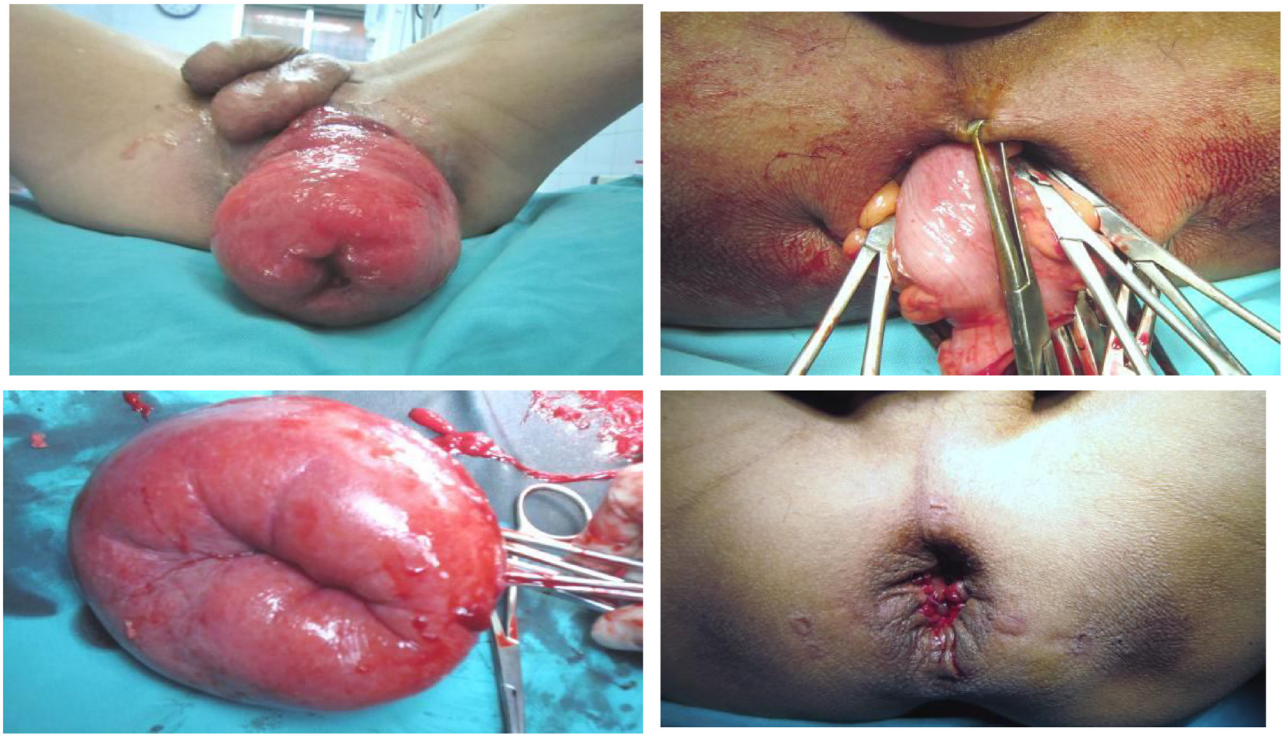

Fig. 1. Patient 69-year-old male treated by Altemeier's procedure without colostomy.

ical history. On examination, he was found to have a massive rectal prolapse, which was incarcerated but with no sign of necrosis.

All preoperative tests were within normal limits, and he was taken to the operating room emergently. The operation performed was a perineal rectosigmoidectomy, which was done using spinal anesthesia. The prolapsed rectum and sigmoid colon were resected and colo-anal anastomosis was performed without colostomy. The surgery was done by a senior surgeon with extensive experience in colon and rectal surgery. The patient was discharged after seven days without any complications, and follow up over the next five years revealed no sign of recurrent prolapse and the patient had no permanent sphincter dysfunction.

3.2. Case 2

The patient is a 52 year old male, who reported symptoms of rectal prolapse requiring manual reduction for three years. Two days prior to presentation the prolapse had become completely irreducible. Clinical examination showed a massive non-reducible rectal prolapse with evidence of patchy mucosal necrosis (Fig. 2). All preoperative tests were within normal limits, and a CT scan documented massive full-thickness prolapse of the rectosigmoid colon through the anal verge (Fig. 3). Emergency perineal resection and repair were accomplished using the Altemeier's technique, with the addition of sigmoid colostomy diversion due to questionable anastomotic viability. This surgery was done by a surgeon with more than 10 years experience doing colon and rectal surgical procedures. The patient had an uncomplicated post-operative course and was discharged home after seven days. His colostomy was closed after complete healing was assured by proctoscopic and radiologic evaluations. Two months later he had no evidence of prolapse recurrence.

4. Discussion

Rectal prolapse is a condition that is generally more common in females than in males [2]. In the West, most of the women tend to be elderly and many have had multiple pregnancies and deliveries. In our population, approximately 1/3 of female patients are young and nulliparous. Males with rectal prolapse commonly have other associated symptoms such as defecation disorders and many have a history of psychologic maladies [3,4].

Rectal prolapse is generally diagnosed on the basis of symptoms and clinical examination. Sometimes additional testing, such as dynamic MRI or anal manometry can be utilized to elucidate any underlying conditions which may be contributing to the etiology of the prolapse. In women, prolapse of other pelvic organs, such as uterus, vagina and/or bladder are not uncommon, and the clinician should look for evidence of these so that they can be addressed simultaneously.

There have been many surgical procedures described to correct rectal prolapse. These techniques can be broadly characterized into two groups: abdominal procedures (i.e. Orr-Loygue, Ripstein, Wells) and perineal procedures (i.e. Delorme, Altemeier). More recently, laparoscopic and robotic approaches have been described as alternative abdominal procedures. The choice of operation depends upon the patient's clinical condition, the size of prolapsed mass as well as the surgeons experience, skill and preference.

Most cases of incarceration can be reduced utilizing a variety of techniques, however when the prolapse is irreducible, whether there is necrosis or not, urgent surgical correction becomes necessary. Perineal rectosigmoidectomy (Altemeier's procedure) should be strongly considered in this situation. The procedure is well tolerated and is associated with few major complications. Long term, this procedure has been associated with higher recurrence rates than what has been reported with abdominal types of repair [5,6].

Fig. 2. Patient 52-year-old male treated by Altemeier's procedure with temporary colostomy diversion.

The role of diverting colostomy when performing colo-anal anastomosis for a patient with incarcerated rectal prolapse is controversial, and it depends not only on patient's condition, but also on the surgeon's skill and experience. Koizumi reported a case of incarceration of rectal prolapse which was repaired with Altemeier's procedure without colostomy, and the result was very good [7], similar to our experience. Voulimeneas, et al reported a complicated case of gangrenous rectal prolapse, which was treated using Altemeier's procedure with colostomy diversion [8]. Another case was reported by Cernuda and colleagues in which a patient was treated with perineal rectosigmoidectomy and a diverting colostomy was utilized. Subsequently, after six months follow-up there was no evidence of recurrent prolapse [9].

Both of our patients recovered well without any complications and returned to daily activities within weeks of surgery. One patient required fecal diversion, and in that case the colostomy was closed within one month of the initial operation.

Obviously, we are limited by the retrospective nature of this series and by the small number of patients. However, our observations are similar to those that other authors reported previously, in single case reports.

5. Conclusion

Incarceration of rectal prolapse is uncommon. Perineal rectosigmoidectomy (Altemeier's procedure) should be considered as an option, even in emergency situations. The procedure is generally both safe and effective and is associated with few complications. The recovery, from the patient's perspective, is usually relatively easy. The need for diverting colostomy depends on the patient's condition and the surgeon's skill and experience.

Conflicts of interest

All authors declare that they have no competing interests.

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There is no funding for our research, it is our individual research.

Ethical approval

This study was approved by our institution ethical commission (Viet Duc University Hospital). The ethical form will be given to editors if it is required.

Consent

Written informed consent was obtained from the patients for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor- in-Chief of this journal.

Author contribution

Phuc Khanh Pham: Concept and design of study, drafting, revision, approval of final manuscript.

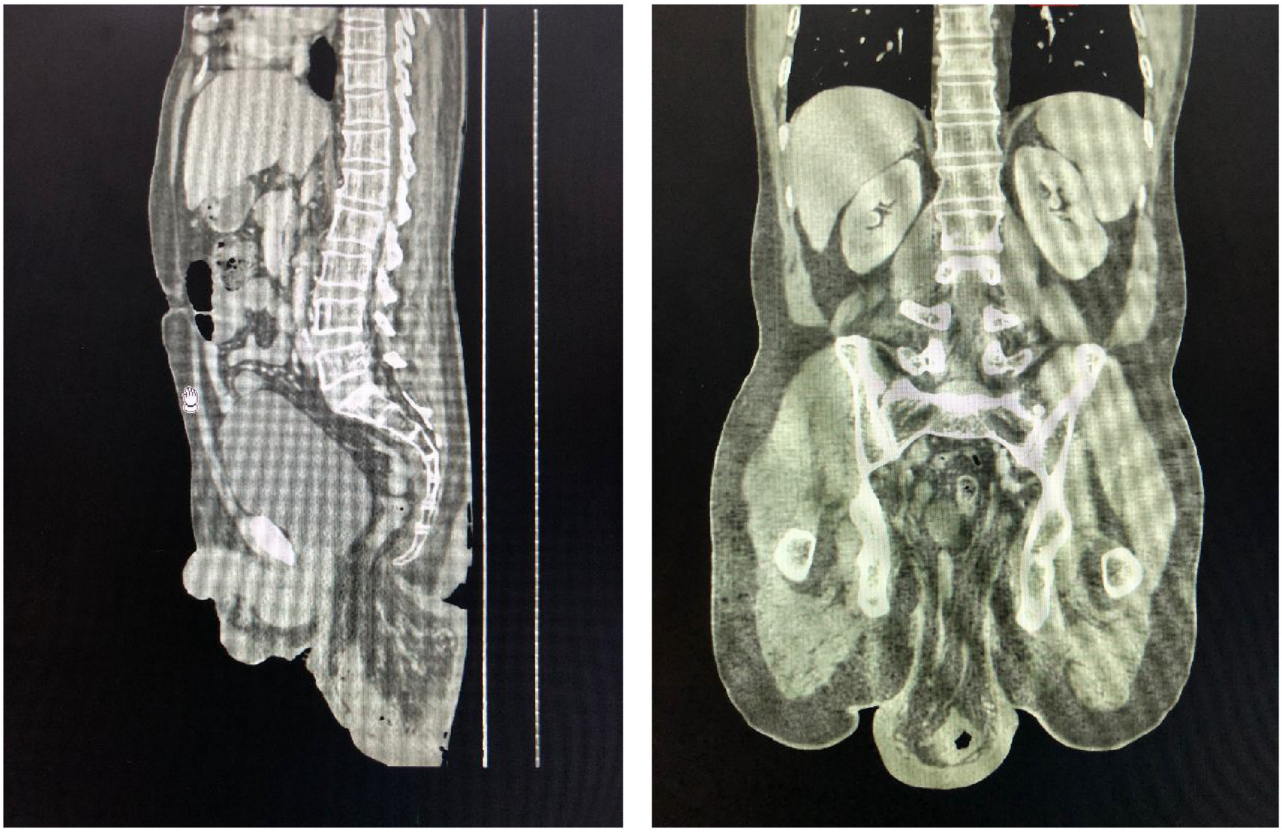

Fig. 3. CT scanner image of full-thickness massive rectal prolapse.

Xuan Hung Nguyen: Concept and design of study, drafting, revision, approval of final manuscript.

Randolph Steinhagen: Concept and design of study, drafting Revision, interpretation, approval of final manuscript.

Ngoc Anh Nguyen: Revision, approval of final manuscript.

Gia Anh Pham: Revision, approval of final manuscript.

Nhat Huy Le: Revision, approval of final manuscript.

Registration of research studies

The research is registered on clinicaltrials.gov, The research registry number is NCT03643393.

Guarantor

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