Reduction En-Masse of Inguinal Hernia After Self-Reduction

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Case report

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Abstract

Background: Reduction en-mass (REM) is one of the rare complications of inguinal hernia reduction.

Case presentation: Our patient is a 50-year-old man with a history of inguinal hernia, who had been referred with the periumbilical pain that radiated to the right lower quadrant following hernia replacement by himself.

Conclusions: Finally, REM diagnosis was made based on clinical examination and imaging, and surgical treatment was performed. In very rare cases, hernia was reduced by patients themselves. In this case study, a patient with a history of recurrent inguinal hernia was reported. The patient himself reduced his hernia the last time. In CT of the abdomen and pelvis, evidence of sac wall and small intestine fibrosis was seen as closed loop.

Background

Reduction en-mass (REM) is one of the complications of inguinal hernia reduction inside the abdomen. REM refers to the placement of the herniated sac inside the abdominal wall while the contents of the sac remain incarcerated or strangulated. Most of the time, this sac stays in the preperitoneal space (1).

REM usually occurs after reduction with compression in the inguinal hernia. Although REM can be detected based on specific computed tomography (CT) scan findings, however, due to the rarity of this complication, many radiologists are not familiar with its radiological appearance (2). Here we report a case of REM caused by hernia replacement by the patient himself.

Case Presentation

A 50-year-old patient was admitted with periumbilical pain that radiated to the right lower quadrant from 12 hours earlier. The patient had a history of right inguinal hernia three years ago. He was hospitalized twice due to incarceration and was a candidate for surgery, but he had not consented to surgery. The patient also had a history of ischemic heart disease and right hip arthroplasty. He consumed opium orally.

The day before admission, the patient suffered from pain and gradually inability to pass gas or stool following inguinal hernia reduction by himself. On physical examination, periumbilical and RLQ tenderness was revealed. There was no acidosis or leukocytosis in the blood tests. Since there was no evidence of the previous hernia on the physical examination and the patient reported intestinal obstruction symptoms, the medical team decided to perform computed tomography (CT) scan of the abdomen and pelvis (Fig. 1,a). CT scan findings showed some evidence of obstruction of small intestine and hernia sac and its contents inside the abdominal wall (Fig. 1,b). The patient underwent laparotomy with a midline incision. A small intestinal loop with slight discoloration and adherence to the wall of the hernia sac was seen inside the inner ring of the inguinal canal (Fig. 1,c).

The intestinal loop was released from the sac without resection, and the abdomen was closed. The classic parainguinal hernia incision was then repaired by Lichtenstein repair. The patient was observed for up to five days and finally discharged without any complications.

Conclusions

In the inguinal hernia, REM is a rare complication and can cause complications such as intestinal obstruction, gangrene, and peritonitis due to delayed detection (1). Imaging findings can be helpful in suspicious cases.

REM imaging findings report a specific sign called "preperitoneal hernia sac sign", which shows the incarcerated intestine placed in hernia sac inside the preperitoneal space and close to the hernia sac (3).

According to Nason LM, Mixter, several criteria are required for REM to occur:

- 1) Hernia sac has a narrow neck that makes it difficult for the intestine to come out of the hernia sac.
- 2) The hernia sac is in motion inside the inguinal canal.
- 3) The hernia sac should be sufficiently able to return to the parietal peritoneum and thus allow the sac to move into the peritoneal cavity without moving the intestinal loops (4)

There is usually a history of difficult reductions, which the last reduction is more difficult and is followed by the persistence of symptoms or the temporary improvement of symptoms (2). Our patient was in accordance with the above. Inguinal hernia of our case was reduced twice in emergency room and the patient was discharged with personal consent after the last reduction performed the day before admission.

REM is one of the rare forms of acute intestinal obstruction that is encountered by a limited number of surgeons and is unknown to many radiologists.

On clinical examination, a painful mass can be felt in the proximal inguinal canal, above the inguinal ring, or in the lower quadrant on the reduced side.

Prompt surgical treatment is essential because any delay will exacerbate the symptoms and cause inevitable complications (1). Of course, no masses or lesions were felt in our patient, and the patient only had RLQ tenderness.

So far, limited cases of REM have been reported in which, after a hernia reduction, the patient symptoms were worsened and hernia sac had entered the abdomen completely. However, in very rare cases, hernia was reduced by patients themselves (5).

In this case study, a patient with a history of recurrent inguinal hernia was reported. The patient himself reduced his hernia the last time. In CT of the abdomen and pelvis, evidence of sac wall and small intestine fibrosis was seen as closed loop.

Despite the incarceration of the small intestinal loop inside the hernia sac in the abdominal space, the incarcerated part of the intestine was not resected, and the patient was monitored. Finally, the patient was discharged in good general condition and without any complications.

Abbreviations

REM

Reduction en-mass

CT

computed tomography

RLQ

Right lower quaderant

Declarations

Ethics approval and consent to participate

Not applicable

Consent for publication

We have consent form.

Availability of data and materials

All data generated or analysed during this study are included in this published article.

Competing interests

The authors declare that they have no competing interests

funding

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Authors' contributions

Seyed Zeynab Seyedjavadeyn performed the histological examination of the patiant . hossein zabihi wrote and submitted the article.All authors read and approved the final manuscript

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References

1. Ravikumar H, Babu s, Govindrajan M, et al. Reduction en-masse of inguinal hernia with strangulated obstruction. Biomed Imaging Interv J 2009;5:14.
2. Baik J, Lee Y. Reduction En-masse of Inguinal Hernia with Incarcerated Bowel: Report of a Rare Case. Am J Case Rep, 2019; 20: 1562-1565
3. Alvarez JA, Baldonado RF, Bear IG et al: Incarcerated groin hernias in adults: Presentation and outcome. Hernia, 2004; 8(2): 121–26 7
4. Nason LM, Mixter CG. Hernia reduced en masse. J Am Med Assoc 1935;105(21):1675-7
5. Yatawatta A. BMJ Case Rep published online First: [please include Day Month Year]. doi:10.1136/bcr-2017-220475

Figures

Figure 1

a: computed tomography (CT) scan of the abdomen and pelvis, b: obstruction of small intestine and hernia sac and its contents inside the abdominal wall, c: small intestinal loop with slight discoloration and adherence to the wall of the hernia sac inside the inner ring of the inguinal canal