Laparoscopic management of reduction-en-masse

Manash Ranjan Sahoo,¹ Anil Kumar²

¹Department of General Surgery, S.C.B Medical College, Cuttack, Odisha, India

²Department of Surgery, S.C.B Medical College, Cuttack, Odisha, India

Correspondence to

Dr Manash Ranjan Sahoo,
manash67@gmail.com,
drmanojsg@gmail.com

SUMMARY

Reduction-en-masse of groin hernia is a problem which is rarely encountered by surgeons and in fact in world literature only 200 cases have been recorded till date. Most of the time this complication is overlooked by surgeons. Hence, surgeons repair the hernia leaving the incarcerated bowel inside which might lead to disaster. We report an unusual case of intestinal obstruction due to reduction-en-masse of a groin hernia because of manual reduction by the patient himself 7 days before, which was missed both by the radiologist as well as by the surgeons. It was found out in diagnostic laparoscopy and managed laparoscopically as well, relieving intestinal obstruction. He was discharged with an advice for definitive repair after 3 weeks. To conclude, in patients of groin hernia presenting in any form of intestinal obstruction we have to keep reduction-en-masse in mind and laparoscopy plays an important role in diagnosis and management.

BACKGROUND

Reduction-en-masse of inguinal hernia, means reduction of a hernial sac along with the incarcerated bowel into the preperitoneal space and is usually produced by forcible attempts at reduction. Sometimes, it can also be spontaneous. The hernia appears to have been reduced but the signs of bowel obstruction persist. Reduction-en-masse of groin hernia is a problem which is rarely encountered by surgeons and in fact in world literature only about 200 cases have been recorded till date. Most of the time this complication is overlooked by surgeons. Hence, surgeons repair the hernia leaving the incarcerated bowel inside which might lead to disaster.

It is very important to diagnose it early and treat it at the earliest to prevent ischaemia and gangrene of bowels later which will be disastrous to patients.

CASE PRESENTATION

A 47-year-old man had a groin hernia on the right side which he had reduced himself following which he had pain in the abdomen and vomiting was managed conservatively in a peripheral hospital. He did not respond to conservative treatment. Then he was referred to our centre. On examination, the abdomen was distended with exaggerated bowel sounds. Vital parameters were within normal limits.

INVESTIGATIONS

Routine investigations were inconspicuous. When he presented to us, he had intermittent intestinal obstruction. CT scan showed a cocoon-shaped structure in the right lower abdominal wall. Hence, we decided to undertake a diagnostic laparoscopy

TREATMENT

Under general anaesthesia diagnostic laparoscopy revealed normal left side inguinal region with distorted anatomy on the right side. The bowels appeared to enter into a cocoon in the mid line, which was in fact the hernia sac containing the bowels. Coils of intestines trapped in reduction-en-masse sac were seen (figure 1). On attempt to drag the bowel out of the sac there was difficulty, hence the constricting band was released and the bowels could be comfortably released from the sac into the peritoneal cavity along with a gush of yellow coloured toxic fluid coming out of the sac (figure 2). After the bowels and fluid were cleared from the sac we inspected the inside of the sac and clearly identified the lax patulous internal ring (figure 3). Then, we introduced a thin slice corrugated drain from the root of the scrotum into the sac. Finally, by intracorporeal suturing with 2-0 vicryl the sac was closed laparoscopically (figure 4). We did not attempt to repair the hernia since there was trapped toxic fluid with oedematous bowel and contaminated environment.

OUTCOME AND FOLLOW-UP

Postoperative recovery was uneventful. Bowel sounds appeared on the second postoperative day. The patient was discharged on the fourth postoperative day with an advice to come back after 3 weeks for total extraperitoneal repair.

DISCUSSION

Reduction-en-masse of a groin hernia is an extremely rare occurrence, as evidenced by the fact that to date about 200 cases have been recorded in the world literature. After Harold *et al*¹ in their article in 1965 gave statistics of about 200 of such cases in the literature we only got about 15 more cases added to that after an extensive Pubmed search till date. This entity may be defined as

Figure 1 Intestines trapped in reduction-en-masse sac.

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Figure 2 Toxic fluid coming out of sac.

Figure 4 Closure of the sac laparoscopically.

Figure 3 Patulous internal ring.

displacement of a hernia without relief of incarceration or strangulation; it is a rare form of acute intestinal obstruction that few surgeons get to see and with which many radiologists are unfamiliar. It has been quoted by Pearse to occur in approximately 1 of 13 000 hernias.² It was first described in 1702 by Saviard.

Four types of 'en masse' reductions have been described:³

1. Retropubic
2. Intra-abdominal
3. Preperitoneal
4. Preperitoneal locule

The latter two categories are actually interparietal hernias.⁴

It appears therefore that for reduction-en-masse to occur, three conditions must be fulfilled:⁵

- A. A lax internal ring
- B. A relatively narrow neck

C. A real or potential preperitoneal sac

A possible explanation for the latent interval in reduction-en-masse has been propounded as that in these cases reduction is always incomplete and that a coil of bowel remains unobstructed in the pro-peritoneal space. Any sudden increase in intra-abdominal pressure, for example, coughing or straining, perhaps involuntarily, will have the effect of forcing more gut into the pro-peritoneal sac where it becomes stuck at the neck, thus precipitating strangulation.

Learning point

For correct diagnosis of reduction-en-masse, laparoscopy is probably the best tool otherwise if the surgeon attempts a Lichtenstein repair the incarcerated bowel may be left inside to land the surgeon in disaster.

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