OBTURATOR HERNIA — REVIEW OF THREE CASES

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SYNOPSIS

Obturator hernia commonly presents as intestinal obstruction and is frequently complicated by strangulation. The patients are usually elderly females of thin build. Preoperative diagnosis is difficult, as the hernia is often of Richter's type, only rarely is externally visible. Plan X ray examination may give a clue if a loop of air bubble is seen in the region of obturator canal. Perforation of bowel frequently occurs during release of strangulation due to the tightness of strangulation as well as difficulties in access to obturator canal. Though the mortality and morbidity of this condition has been considerably reduced in recent years due to the better anaesthetic facilities, attention to surgical techniques mentioned below and greater awareness leading to earlier diagnosis, wound infection still occurs frequently.

Three cases of obturator hernia are reviewed in this article and serve to illustrate the points noted above.

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INTRODUCTION

Though obturator hernia is less common among the groin herniae it gains importance from the fact that the general surgeon most often encounters it in an emergency situation as intestinal obstruction. Hence it is essential for every general surgeon to have in mind basic facts about this clinical entity. Three cases of intestinal obstruction due to obturator hernia are presented in this report and relevant literature is discussed briefly.

CASE I

A 52-year old female presented to a peripheral hospital with colicky central abdominal pain, distension, constipation and vomiting, developing gradually over three days. In addition she complained of pain in her right hip which had been present for a few weeks but had increased over the last one week. She had undergone transabdominal hysterectomy six years earlier. On examination, she was of thin build and had typical features of small intestinal obstruction with dehydration, visible intestinal peristalisis, central distension and borborygmy. External hernial orifices were normal. Hip examination revealed limitation of abduction beyond 30°. Rectal examination was normal. Plain X-ray abdomen revealed multiple fluid levels and small bowel distension. She was referred to us as she did not improve with conservative treatment.

The diagnosis of small bowel obstruction was obvious but preoperatively adhesive obstruction was thought to be the cause though obturator hernia was also considered due to the history of pain in the hip and the plain X-ray finding (refer (Fig. 1).

On laparotomy, through a right paramedian incision the distended proximal ileum was seen to be running into the pelvis and entering the obturator canal on the right side. A length of 1 inch of bowel was incarcerated into the canal. The patient was placed in Trendelenburg position. The strangulation was released by stretching the neck of sac and the boundaries of obturator canal with the finger and during the manouevere the intestine which was gangrenous was perforated. Soiling was minimised by control with occlusion clamps applied to proximal and distal intestines. The gangrenous segment was resected and the healthy ends anastomosed. The sac was very adherent to the obturator canal and could not be dissected and inverted. The neck of the sac was closed with nylon purse-string sutures. The abdomen was closed in layers with a drain in the pelvis.

Post operatively the patient had infection of the abdominal wound which healed over two weeks.

CASE II

A 26-year old male of thin build was referred from a peripheral hospital suffering from central abdominal pain of three days duration and absolute constipation. There was no history of vomiting. The clinical features suggested intestinal obstruction with increased bowel sounds. The hernial orifices were normal. A plain X-ray abdomen showed dilated small bowel shadows with multiple fluid levels. (The film depicted here is the barium enema done in the peripheral hospital prior to referral) (Fig. 1).

On laparotomy through a right lower paramedian incision, an ileal loop about four feet from the ileocaecal junction was found to be entering the obturator canal on the left side. The hernia was of Richter's type. The strangulation was released by finger dilation. During release, the bowel was perforated though the gut was viable. The perforation was tiny and was closed with purse-string sutures. The sac was inverted, transfixed and ligated.

The entrance to the obturator canal was closed by suturing the fascia and tissue of prevesical region over the site with non absorbable sutures. As there was soiling due to perforation of the gut, peritoneal lavage of the pelvis was performed, a drain was inserted and the wound closed. The post operative recovery was uneventful.

CASE III

A 70-year old lady of thin build was admitted with a history of constipation, vomiting on and off, colicky abdominal pain and mild central abdominal distension of two weeks duration. She had been hospitalised for similar symptoms four months earlier which had resolved with conservative treatment.

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On clinical examination she had step ladder visible intestinal peristalisis with increased bowel sounds. Nasogastric suction was brownish and increased in amount. Hernial orifices were normal externally. On digital examination the rectum was empty. Plan X-ray of the abdomen showed dilated small bowel shadows in the supine film and multiple fluid levels on the erect film. (Unfortunately the film taken did not include full pelvis. Refer below). In view of the typical findings and as she did not improve with conservative treatment laparotomy was undertaken.

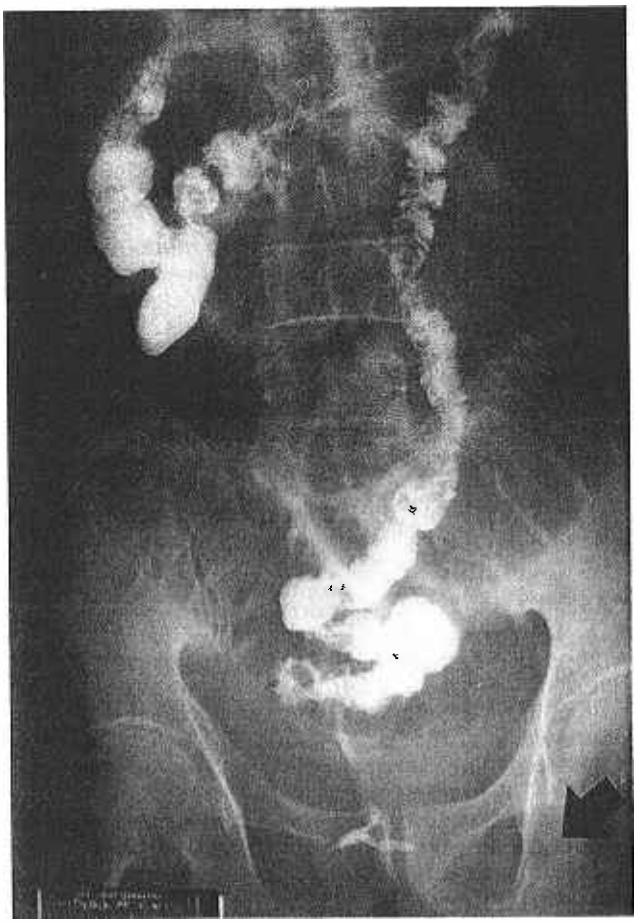

Fig. 1 Film showing typical small bowel obstruction with collapsed large bowel. The loop of air bubble in the region of obturator canal (shown by the arrow) was noted in the first 2 patients reported here. The barium enema film depicted here belongs to the second patient.

Unfortunately the plain X-ray abdominal film of the third patient did not include the entire pelvis and the significance of this omission was realised only after the operation.

On laparotomy, through a mid right paramedian incision the distal ileum was found collapsed and a loop of mid ileum had entered the left obturator canal. The hernia was of Richter's type and the strangulation was very tight. The patient was shifted to Trendelenburg position to aid in dissection. The strangulation was released by finger dilatation of the ring supplemented with incising the edge of the ring medially with a knife under vision. On release the gut was viable but there was a tiny perforation at the summit. This was invaginated with purse string suture. The neck of the sac was closed with a nylon purse-string and reinforced by bringing the broad ligament over the site of the neck of the sac. About one foot proximal to the area of strangulation there was an area of thickening of the bowel, which explained her previous attack of intestinal obstruction and spontaneous cure. However there was no narrowing of the lumen and the area was left alone.

The post operative recovery was smooth except for mild wound infection.

DISCUSSION

Obturator hernia was first described by Arnand De Rousiel in 1724 but the Royal Academy of Sciences in Paris did not accept his description. The first recorded laparotomy for the condition was performed by Helton in 1848.

The condition usually occurs in elderly females (85% females), often patients are of thin build, and over 50 years of age. Only 30% of cases are diagnosed before laparotomy. Most cases present as intestinal obstruction which may be subacute to acute and also recurrent. Diagnosis is often delayed as the hernia is of Richter's type. Bilateral herniae are rare (6%).

Surgical Anatomy

The obturator canal is a fibre osseous channel about 3 cms long and just admits the tip of the little finger. The canal lies between the obturator groove on the lower surface of superior pubic ramus and the upper border of the obturator membrane. It is hence understandable that the unyielding nature of the boundaries encourages early strangulation and also makes operative treatment mandatory. The obturator canal is normally occupied by the obturator vessels and nerve and a plug of fat. (Loss of this fat in malnourished individuals predisposes to herniation into the empty canal).

The obturator nerve lying above the artery is usually on the outerside of the sac. (Pressure on the nerve by the contents of hernia is the basis of Howship-Romberg's sign which is pain referred to the knee by acts like straining or coughing.) The position of the artery is variable. Classically it lies postero lateral to sac. Normally there is a small anastomosis between obturator and inferior epigastric arteries. In about 10% of patients the anastomosis is enlarged, in which case the obturator artery arises from the inferior epigastric vessel.

The obturator canal is wider in females which partly explains the greater incidence of hernia in females. The content is usually small intestine, rarely caecum, pelvic colon, ovary or Fallopian tube. In 50% of cases the hernia is of Richter's type. The sac usually stops within the obturator canal but sometimes passes down into the thigh on the deep surface of pectineus, superficial to adductor longus and thus palpable in the thigh. thigh. In this situation it has to be differentiated from femoral hernia. In obturator hernia the superior pubic ramus can be felt above the lump without discomfort whereas in femoral hernia the lump will be felt anterior to the superior pubic ramus.

Surgical Principles

The following operative points are worthy of mention: The surgical approach is usually by a low paramedian or midline incision as the preoperative diagnosis is seldom confidently made and secondly strangulation can be released under vision with due care to obturator vessels and nerve. It also permits easy intestinal resection when indicated.

Abdominal approach

The Trendelenburg position aids dissection. Stretching of the obturator canal with a finger is a safe way of releasing the strangulation. If this fails the obturator membrane is divided under vision, the division being in a downward and medial direction. Withdrawal of incarcerated intestine is easier if the hip is flexed and adducted. Rarely, an additional thigh incision medial to the femoral vein is required to push the contents up but in practice is seldom required.

After dealing with the contents, the sac is inverted using artery forceps and then transfixed and excised. But in many cases it is difficult to do this as the peritoneum of the sac is very edematous, friable and tears easily due to the tight constriction, and the delayed diagnosis (as in two of the three cases reported here). In such cases the sac is left in situ and the neck closed by non absorble purse-string sutures. This suffices to prevent recurrence and additional reinforcement is done by suturing the broad ligament or prevesical fascia over the site of the obturator canal.

Approximation of the boundaries of obturator canal inlet by non absorbable sutures has been described but is difficult due to the rigid nature of the boundaries. Even nylon darning to close the canal is suggested.

Other routes of approach to the hernia are obturator and inguinal.

Obturator Approach

In this approach an incision is made 8 to 10cms. long from a point midway between pubic tubercle and femoral artery, vertically down with the hip slightly flexed and adducted. The Saphenous vein and the external pudenal vessels are divided between ligatures, the fascia lata is incised in the line of the incision, the space between pectineus and adductor longus opened. Pectineus is cut across and dissected up to the neck. The risk to obturator vessels and nerve is high in this approach. proach.

Inguinal Approach

The approach is extra peritoneal, behind the horizontal ramus of pubis, dividing the external oblique in the line of its fibres. The obturator vessels and nerves can be seen better than in the obturator approach but not as well as in abdominal approach.

A few decades ago the mortality and morbidity of obturator hernia had been very high, (Mortality rates as high as 30% to 50%). However in recent reports mortality has been reduced considerably (5 to 10%). This is due to the greater awareness and earlier diagnosis, better preoperative preparation and anaesthetic facilities. Morbidity wise, wound infection still remains the major problem due to the frequency of strangulation and the difficulties of access, with chances of rupture of bowel wall during release of the strangulation. Attention to surgical techniques like using intestinal occlusion clamps, greater care (and experience) in releasing the strangulation, local peritoneal toilet, local antibiotics and employing drains when indicated would reduce this complication.

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