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Obturator hernia repair – a new technique

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Abstract Obturator hernia is a rare condition with few reports in the world literature. There appears to be no consensus on the ideal approach and repair for such a condition. We report a simple, quick technique via a lower midline incision using an autogenous peritoneal fold. It is ideal for the contaminated case and in settings where mesh is not readily available.

Keywords Obturator hernia · Mesh repair

Introduction

Obturator hernia was described as early as 1724 by Pierre Arnand de Ronsil of France [19]. The condition is relatively rare, accounting for 0.07% of all hernias [5]. Obturator hernias occur predominantly in elderly debilitated females [20]. Due to the absence of external clinical signs, the exact preoperative diagnosis remains elusive, with symptoms and signs of small bowel obstruction usually predominating. Consequently, the morbidity and mortality of the strangulated undiagnosed case is high [13].

There have been several anecdotal case reports and only small series reported in the world literature and, consequently, no consensus on treatment has been reached.

Several approaches have been described, but most require an accurate preoperative diagnosis of the

condition [17]. Several methods of repairing the defect have also been described employing autogenous or prosthetic material [8, 14]. We describe a simple technique employing an autogenous peritoneal fold which is quick and simple and avoids damage of the nearby neurovascular bundle. We suggest this technique as an additional option for dealing with the defect in the obturator membrane.

Case report

A 72-year-old, otherwise healthy male presented to the General Hospital, Port-of-Spain with a 5-day history of obstipation associated with profuse, bilious vomiting. He complained of discomfort in the entire abdomen but claimed that this was not as severe as the pain in the right hip and knee. He had no history of previous surgery.

Examination revealed an emaciated male with a distended, mildly tender, tympanitic abdomen, with increased bowel sounds. Examination of the right lower extremity revealed no abnormalities.

Abdominal roentgenograms revealed dilated loops of jejunum and proximal ileum. A small amount of gas was seen in the rectosigmoid area. Films of the right hip and knee were also taken to rule out orthopedic pathology, but these were found to be grossly normal.

A diagnosis of mechanical small bowel obstruction due to adhesions or the presence of an occult hernia was entertained and an exploratory laparotomy was performed.

A right-sided strangulated obturator hernia of the Richter's type was identified involving the proximal ileum. Reduction of the hernia revealed a small portion of gangrenous small bowel that was treated by wedge resection and single layer closure.

The defect in the obturator foramen was found to be approximately 10 mm in diameter and grossly contaminated. It was closed using the peritoneal fold technique (see below) and the patient had an uneventful postoperative course. He succumbed to a myocardial infarction 3 months later. Postmortem revealed that the repair of the defect was intact.

Technique

The defect in the obturator membrane is identified. Any bowel contamination on the peritoneum is swabbed away. A fold of

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peritoneal membrane along with the retroperitoneal fatty tissue is raised approximately 10–20 mm from the defect. The tenting of this tissue has the effect of everting and flattening the hernia sac. The edge of the fold is then sutured to the peritoneum over the superior pubic ramus approximately 10 mm from the hernia orifice. Deep suture bites are taken, ensuring incorporation of the periosteum of the pubic ramus into the repair. An interrupted suture technique using 2/0 polypropylene is employed. Sutures are placed, one at the apex of the fold and one each on either side.

Care is taken to avoid suturing close to the superior-medial aspect of the obturator foramen where the obturator neurovascular bundle passes. Digital pressure on the repair is used to ensure that the defect is securely closed. Ischemic bowel is repaired in the preferred fashion.

Discussion

The obturator hernia occurs through the obturator canal, which is usually 10 mm in diameter and oval shaped [1]. It lies on the superior-medial border of the obturator membrane and is plugged with preperitoneal fat [10]. This canal is larger and more triangular in the female, probably accounting for the occurrence of this hernia six times more frequently in females than in males [20].

The obturator neurovascular bundle passes through this opening along the superior-medial margin of the canal [14]. The hernia can compress the obturator nerve, leading to pain in the area supplied by the cutaneous branch of the anterior division of the obturator nerve, thus producing the so-called Howship-Romberg sign [4].

In approximately 20–30% of cases, the diagnosis is made preoperatively by the presence of the Howship-Romberg sign, contrast herniography [6], or computed tomography [4]. In such cases, the inguinal extraperitoneal approach or the midline extraperitoneal (Cheatle-Henry) approach can be used [9, 15].

In most cases, the diagnosis of small bowel obstruction of unknown etiology is made. The ideal approach is via the lower midline incision, which offers quick extensive exposure and allows for bowel repair and easy access to the obturator foramen [11].

Many techniques for closure of the defect have been advocated. Primary closure of the defect by tissue approximation is impossible, due to the immobility of the bony obturator canal and rigidity of the obturator membrane. More mobile nearby tissue may be used to close the defect [2, 8]. However, this can lead to chronic pain or herniation of the tissue patch.

The use of a synthetic mesh has been advocated as a simple, quick, effective means of closure [4, 16]. This can be performed open or laparoscopically [21]. The use of a Mersilene plug has also been described [12]. Tchupetlowsky and colleagues have described the use of an antibiotic impregnated mesh plug introduced into the defect [17]. This technique has been performed in seven cases [18]. Both the patch and the plug technique require the use of a foreign body and therefore increase

the chance of sepsis, especially in the contaminated case. In addition, the mesh plug may act as a “tumor,” thereby exacerbating obturator neuralgia. A new device involving the use of metal anchors has been documented [7] but still bears all the complications of a foreign body.

Bowel resection is required in 50% of cases [3]. The ideal means of closure in the contaminated case involves the use of autogenous tissue. While simple closure may achieve this, the risk of neurovascular damage is high. Our technique places the sutures 10–15 mm away from the obturator canal onto the periosteum of the pubic bone. The risk of neurovascular injury is therefore very low, especially in cases of an aberrant obturator artery.

The risk of recurrence is low, as the orifice is blocked by two layers of peritoneal lining and preperitoneal fat, with stretching out and flattening of the hernia sac. Such a “patch” is more than adequate, especially in the more common case of small hernia defects.

We advocate this technique as a quick, safe way of patching the hernia orifice with minimal risk of neurovascular injury, especially in the contaminated case and in the Third World setting, where mesh is not readily available.

References

1. Anson BJ, McCormack LJ, Cleveland HC (1950) The anatomy of the hernial regions. Obturator hernia and general considerations. *Surg Gynecol Obstet* 90:31–38
2. Arbman G (1984) Strangulated obturator hernia – a simple method for closure. *Acta Chir Scand* 150:337–339
3. Auroseau R, Martinon F, Czychlick JH, Allouch F (1978) Surgery of obturator hernia by closure of the obturator canal with the round ligament. *J Chir* 115:35–38
4. Bergstein JM, Condon RE (1996) Obturator hernia: current diagnosis and treatment. *Surgery* 119:133–136
5. Bjork KJ, Mucha P Jr, Cahill DR (1988) Obturator hernia. *Surg Gynecol Obstet* 167:217–222
6. Carriquiry LA, Pineyro A (1988) Preoperative diagnosis of non-strangulated obturator hernia: the contribution of herniography. *Br J Surg* 7:785
7. De Leo S, Gulla N, Patriti A, Bufalari A, Capitanucci L, Ciaccio V, Tristaino B (2000) Obturator hernia: a new device in mesh repair. *Hernia* 4:155–158
8. Hanley JA, Hanna BK (1970) Obturator hernia: a report of three cases with strangulation occurring twice in two patients. *Ir Med J* 63:396–398
9. Henry AK (1936) Operation for femoral hernia by a midline extraperitoneal approach. *Lancet* 1:531–533
10. Lo CY (1998) Obturator hernia revisited: a review of 12 cases in 7 years. *J R Coll Surg Edinb* 43:364
11. Lobo DN, Clarke DJ, Barlow AP (1998) Obturator hernia: a new technique for repair. *J R Coll Surg Edinb* 43:33–34
12. Martinez Insua C, Costa Pereira JM, Cardoso de Oliveira (2001) Obturator hernia: the plug technique. *Hernia* 5: 161–163
13. Schmidt PH, Bull WJ, Jeffery KM, Martindale RG (2001) Typical versus atypical presentation of obturator hernia. *Am Surg* 67:191–195
14. Skandalakis LJ, Androulakis J, Colborn GL, Skandalakis JE (2000) Obturator hernia. Embryology, anatomy, and surgical applications. *Surg Clin North Am* 80:71–84

15. Soothill EF (1954) Obturator hernia. *Guy's Hosp Rep* 103: 43-48
16. Stoppa RE, Warlaumont CR(1989) On the preperitoneal approach and prosthetic repair of groin hernia. *JB Lippincott* 199-255
17. Tchupetlowsky S, Losanoff J, Kjossev K (1995) Bilateral obturator hernia: a new technique and a new prosthetic material for repair – case report and review of the literature. *Surgery* 117:109-112
18. Tucker JG, Wilson RA, Ramshaw BJ, Mason EM, Duncan TD, Lucas GW (1995) Laparoscopic herniorrhaphy: technical concerns in prevention of complications and early recurrence. *Am Surg* 61:36-39
19. Watson LF (1948) Anatomy, etiology, symptoms, diagnosis, differential diagnosis, prognosis and treatment. *Mosby, St. Louis*, pp 457-475
20. Yip AWC, Ah Chong AK, Lam KH (1993) Obturator hernia: a continuing diagnostic challenge. *Surgery* 113:266-269
21. Yokoyama T, Munakata Y, Ogiwara M, Kawasaki S (1998) Laparoscopic mesh repair of a reducible obturator hernia using an extraperitoneal approach. *Surg Laparosc Endosc* 8:78-80