Fitreena A.A[1], Shahidah C.A[2], Mohd. Nizam M.H[3], Wan Zainira W.Z[3], Wong M.P.K.[3]

[1]Advanced Medical and Dental Institute, Universiti Sains Malaysia, Bertam ,13200 Kepala Batas, Pulau Pinang, Malaysia

[2]Department of Surgery, International Islamic University Malaysia, Pahang, Malaysia

[3]Department of Surgery, Universiti Sains Malaysia, Kelantan, Malaysia

Obturator Hernia: A Rare Condition with Common Surgical Symptoms

Abstract— Hernia is a common surgical problem. However, worldwide incidence of obturator hernia is <1% of all hernia cases, occurring more commonly in thin, elderly and multiparous female. An 82 years old lady presented with bowel obstruction sign and symptoms for 4 days duration. Imaging study, computed tomography with enhanced contrast (CECT) of abdomen and pelvis showed small bowel obstruction secondary to left obturator hernia. Emergency abdominal exploration with left transverse transperitoneal approach was performed. Intraoperatively, anti mesenteric part of ileal wall was incarcerated through the left obturator foramen causing small bowel obstruction and it was resected with end to end anastomosis. She recovered well and was discharged on postoperative day 7. The signs and symptoms of obturator hernia are non-specific. Most cases are presented with symptoms of intestinal obstruction, resulting in diagnostic difficulty for this rare condition. Delay in diagnosis and surgical intervention contribute to poorer outcomes.

***Keywords*— intestinal obstruction, obturator hernia, pelvic hernia**

Received 20 Mac 2018
Revised 04 May 2018
Accepted 17 May 2018.
Published Online 01 June 2018

*Corresponding author:
Fitreena Anis Amran
E-mail: fitreena@usm.my

1 INTRODUCTION

Three centuries ago in 1724, Pierre Roland Arnaud de Ronsil first described obturator hernia as a rare type of pelvic hernia. However, it was first successfully revamped only in the year 1851 by Henry Obre[1]. The incidence of obturator hernia is <1% of all hernias and accounts for 0.2-1.6% of small bowel obstruction[1]. Even though the incidence is very low, the mortality rate (range 13% - 40%) is the highest in all abdominal wall hernias[2]. The incidence of obturator hernia was reported to be much higher in Asians than in Westerners[2]. Herein, we report this case to emphasize the least common diagnosis of intestinal obstruction and to share our surgical approach for this patient.

2 CASE REPORT

We reported a case of an 82-year-old Malay female presented with vomiting for 4 days duration associated with absent bowel opening and with abdominal discomfort. Clinically, her abdomen was soft, mildly distended and tender at the lower abdomen. Bowel sound was normal. Hernia orifices were intact. There was no medial thigh or femoral swelling noted on external examination. There was no Howship-Romberg or Hannington-Kiff sign found in this patient. Otherwise, nasogastric tube showed feculent material suggestive of intestinal obstruction.

An abdominal x-ray revealed mildly dilated small bowel (Figure 1). Urgent computed tomography with contrast-enhanced (CECT) of abdomen and pelvis showed left obturator hernia with small bowel obstruction (Figure 2). Emergency abdominal exploration with left transverse transperitoneal approach was performed. A segment of the anti-mesenteric part of small intestine was incarcerated tightly through the left obturator foramen and was reduced smoothly. However, there was multiple serosal tear during the manipulation (Figure 3). The affected bowel was resected about 10cm in length and end-to-end anastomosis was done (Figure 4). The obturator foramen, size 1cm x1.5cm was closed primarily with Prolene 2/0 (Figure 5). No mesh was applied as the lumen was very small. Postoperatively, she recovered

well and was discharged on the 7th postoperative day without any complication.

Figure 1: Abdominal x-ray showed mildly dilated small bowel

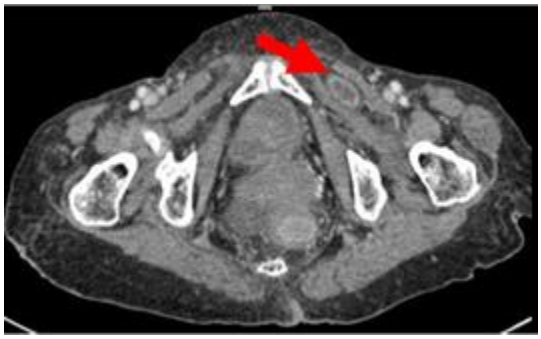

Figure 2: CT abdomen/ pelvis showed ileum herniated through left obturator foramen

3 DISCUSSION

Herniation through the obturator canal usually occurred when part of peritoneal sac protrudes through the obturator canal which is approximately 2-3cm long and 1cm wide, along with its obturator nerve and vessels[3]. The canal is an oval opening located above the obturator membrane border, with two-thirds of it covered by a bony wall and the remaining one third by the obturator membrane[3].

It is known as 'the skinny old lady hernia' because it is nine times more common in emaciated older female (age between 70-90 years old). Due to female pelvic nature, skinny older age lady not only has broader pelvis but larger obturator canal due to loss of corpus adiposum and laxity of pelvic tissue[4]. Obturator hernia commonly occurred on the right side[1] in female because the left obturator foramen usually covered by sigmoid colon[4]. However, peculiar in this case, the obturator herniation occurs on the left obturator foramen. The reason for this cannot be ascertained but it is possible due to her small stature and old age, her sigmoid colon is much shorter and less bulky compared to the normal adult.

Figure 3: Left obturator foramen visualized after releasing of herniated ileum

Figure 4: segmental ileum ischaemia with serosal tear due to strangulated and incarcerated obturator hernia

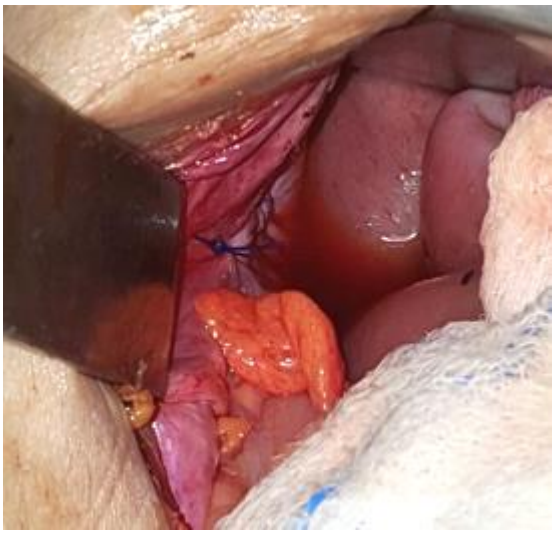

Figure 5: Left obturator foramen was closed primarily with Prolene 2/0.

Obturator hernia is difficult to diagnose. Hence, delays in diagnosis lead to higher morbidity and mortality rates (15-25%) due to the presence of infarcted bowel (60-75%)[2,5]. The clinical presentations are vague as 90% of patients presented with signs and symptoms of intestinal obstruction such as nausea, vomiting and crampy abdominal pain[1], which can be immediate or intermittent[6]. Howship-Romberg sign or obturator neuralgia ~~is~~, characterized by pain or tingling in the medial side of thigh, is the classical sign of obturator hernia, occurring in up to 43.5% of patients[4]. Whereas, Hannington-Kiff sign is the absent of adductor reflex in the thigh due to compression of obturator nerve[6]. Rarely, patient had inguinal mass as only about 20% of cases reported this[7]. This patient presented ~~in~~ with acute intestinal obstruction and did portray neither Howship-Romberg nor Hannington-Kiff sign. This will sway the diagnosis towards other common diseases such as colorectal carcinoma or bowel volvulus which ~~is~~ are more common in the elderly patients.

CECT of the abdomen and pelvis is the gold standard imaging technique for obturator hernia, which improved preoperative diagnosis[6,7], especially in those without Howship-Romberg sign. The use of CT scan reduces the rate of bowel resections[4], helps to assess the presence of contralateral obturator hernia[7] and improves outcomes[4]. In this case, CECT of the abdomen and pelvis was done preoperatively and confirming the diagnosis of obstructed left obturator hernia.

Mainstay treatment of obturator hernia is still surgery[8]. The approach of obturator hernia can either be via transperitoneal approach (lower midline laparotomy), abdominal extraperitoneal approach or laparoscopically. However, abdominal approach is the preferred option in emergency setting because it allows adequate exposure of the obturator foramen and inspection of bowel for ischemia or gangrene[4]. About, 25% of obturator hernia cases required bowel resection[4]. The closure of obturator foramen depends on the size of the defect. It can be done either by using mesh or just by using non-absorbable suture which includes superior pubic ramus and fascia on the internal obturator muscle[4]. In this case, in view of the small defect, non-absorbable suture, Prolene 2/0 was used to close the defect.

Another approach to close the defect is the extraperitoneal approach. It is done by entering the preperitoneal space and exposing superior pubic ramus and obturator internus muscle. The hernia and its content are reduced, internal opening is opposed and the preperitoneal mesh is placed. However, this approach has limitation because the hernia content cannot be assessed and the injury to the hernia content cannot be repaired accordingly. In laparoscopically either in non-emergency setting or incidental findings, both transabdominal preperitoneal (TAPP) or totally extraperitoneal (TEP) can be performed with defect repaired using mesh[9, 10, 11]. In this patient, the hernia sac content was ileum being of a Richter's type. About 50% of obturator hernia sac content found is ileum. Other less common structures include appendix, appendices epiploicae of sigmoid, omentum, uterine tubes, bladder and Merkel's Diverticulum[12].

4 CONCLUSION

Obturator hernia is an uncommon clinical entity, commonly presented with intestinal obstruction with high morbidity and mortality. Obstructed obturator hernia should be considered in the differential diagnosis of all elderly female presented with intestinal obstruction. Early CT scan is helpful in preoperative diagnosis. Surgical approach depends on the severity of illness and the availabilities of expertise.

CONFLICTS OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

ACKNOWLEDGEMENT

I will like to thank Surgical Department, Medical Faculty, Hospital University Sains Malaysia for their support in managing this patient.

REFERENCES

[1] Paige, J. (2014). The management of semilunar line, lumbar, and obturator hernia. In: Cameron, A. M. and Cameron, J. L. (eds.), *Current Surgical Therapy* 11 ed. Philadelphia: Elsevier.

[2] Mantoo S.K., Mak K., Tan T.J. (2009). Obturator hernia: diagnosis and treatment in the modern era. *Singapore Med J*, 50(9): 866-870

[3] Hodgins, N., Cieplucha, K., Conneally, P. &Ghareeb, E. (2013). Obturator hernia: A case report and review of the literature. *International Journal of Surgery Case Reports*, **4**, 889-892.

[4] Kammori, M., Mafune, K., Hirashima, T., Kawahara, M., Hashimoto, M., Ogawa, T., Ohta, H., Hashimoto, H. &Kaminishi, M. (2004). Forty-three cases of obturator hernia. *The American Journal of Surgery*, **187**, 549-552.

[5] Cuschieri, A. (2015). Disorders of the abdominal wall, peritoneal cavity and retroperitoneum. In: Cuschieri, A. and Hanna, G. B. (eds.), *Essential Surgical Practice* 5 ed. Florida: CRC Press, pp 492-503.

[6] Losanoff, J. E., Richman, B. W. & Jones, J. W. (2002). Obturator hernia. *Journal of the American College of Surgeons*, **194(5)**, 657-663.

[7] Elena, M.-F., Stephanie, G.-B., Fernando, L.-M., Roberto, M.-O., Alfredo, M.-L. & Salvador, L. (2007). Computed tomographic diagnosis of obturator hernia and its surgical management: A case series. *International Journal of Surgery* **5**, 139-142.

[8] Kulkarni, S. R., Punamiya, A. R., Naniwadekar, R. G., B, J. H., Chotai, T. D., Singh, T. V. &Natchair, A. (2013). Obturator hernia: A diagnostic challenge. *International Journal of Surgery Case Reports*, **4**, 606-608.

[9] Skandalis, J. E. (1989). Obturator hernia. In: Skandalakis, J. E., Gray, S. W., Mansberger , A. R. J., Colborn, G. L. and Skandalakis, L. J. (eds.), *Hernia: Surgical Anatomy and Technique.* New York: Mcgraw-Hill, pp 174.

[10] Yokoyama, T., Kobayashi, A., Kikuchi, T., Hayashi, K. & Miyagawa, S. (2011). Transabdominal preperitoneal repair of obturator hernia. *World Journal of Surgery*, **10**, 2323-2327.

[11] Shapiro, K., Patel, S., Choy, C., Chaudry, G., Khalil, S. & Ferzli, G. (2004). Totally extraperitoneal repair of obturator hernia. *Surgical Endoscopy*, **6**, 954-956.

[12] H. K. Goon, H. M. Mohd. Bahari (1983). Obturator Hernia: A Case Report. Med. J. Malaysia Volume 38 No.3 September 1983