

# Obturator hernia: Supremacy of CT over clinical findings

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## SUMMARY

*Obturator hernia which is a rare form of external abdominal hernias accounts for 0.07-1 % of all hernias and 0.2-1.6 % of all cases of mechanical obstruction of the small bowel. It has the highest mortality rate of all abdominal wall hernias ranging between 13 % and 40 percent. It is more common in females due to their wider pelvis, more triangular obturator canal opening and greater transverse diameter. It occurs most frequently in cachectic patients aged between 70 and 90 years. Delayed diagnosis and surgical intervention are the most important causes of its high morbidity and mortality. The aim of this report was to emphasize importance of CT by presenting the case with mechanical intestinal obstruction and vague clinical findings, who was diagnosed with obturator hernia using computed tomography.*

**Key words:** Hernia, CT, ileus

## ÖZET

### Obturator herni: BT'nin klinik bulgulara üstünlüğü

*Eksternal abdominal hernilerin ender görülen bir türü olan obturator herni; tüm hernilerin % 0.07-1 ve tüm mekanik obstrüksiyon olgularının % 0.2-1.6'sını oluşturur. Tüm abdominal herniler arasında % 13-40 ile en yüksek mortalite oranına sahiptir. Kadınlarda daha geniş pelvis yapısı, daha üçgenimsi obturator kanal açıklığı ve daha geniş enine çapı olduğu için, obturator herni daha sık görülür. En sık kaşektik hastalarda ve 70-90 yaşları arasında görülür. Yüksek morbidite ve mortalitesinin en önemli nedeni gecikmiş tanı ve cerrahi girişimdir. Bu çalışmanın amacı; mekanik intestinal obstrüksiyonu, müphem klinik bulguları olan ve obturator herni tanısının bilgisayarlı tomografi (BT) ile konduğu olguyu sunarak bu olgularda BT'nin önemini vurgulamaktır.*

**Anahtar kelimeler:** Herni, BT, ileus

Obturator hernia is a type of pelvic hernia in which a bowel segment protrudes through the obturator foramen adjacent to the obturator vessels and nerve. Most abdominal wall hernias are found in the inguinal region as either inguinal or femoral hernias (1). Although obturator hernias account for 0.07-1 % of all hernias (2), they have the highest mortality rate of all abdominal wall hernias ranging between 13 % and 40 percent (3). It is more common in females due to their wider pelvis, more triangular obturator canal opening and greater transverse diameter. It is also called "the skinny old lady hernia" because it is encountered in women in their seventh or eighth decades. The clinical presentation is usually intestinal obstruction (4). Rapid evaluation and early surgical intervention can reduce morbidity and mortality rates. Currently, diagnostic imaging, especially computed tomography, is widely used to diagnose obturator hernias before surgery in the early stages of the disease (5).

In this report, our aim was to present a patient with mechanical intestinal obstruction who was diagnosed as a case with obturator hernia using computed tomography.

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## CASE REPORT

A-74-year old emaciated woman was admitted to our hospital with abdominal pain and repeated episodes of diarrhea over 3 months. She had suffered from loss of appetite for almost a year. She used oral pa-

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racetamol tablets irregularly to relieve her pain. She gave birth to 6 children and did not have any history of previous abdominal surgery. On physical examination, the patient's vital signs were stable. Her abdomen was distended and abdominal tenderness was present with no evidence of peritonitis or free fluid. No mass was palpated in the bilateral groin. There were hyperactive bowel sounds. No abnormal signs were found on fecal microscopic examinations and feces culture. Biochemical parameters were normal. Plain abdominal radiography revealed multiple distended bowel loops with gas-fluid levels compatible with ileus (Figure 1). Intravenous and oral contrast-enhanced CT was ordered. CT scan demonstrated mildly dilated fluid-filled loops of small bowel up to a herniated loop of small bowel, through the obturator canal. Small bowel loop was noted between the right internal and external obturator muscles (Figure 2,3,4). Obturator hernia was diagnosed and surgical treatment was arranged.



Figure 1. Plain abdominal radiography: multiple distended bowel loops with gas fluid levels.



Figure 2. IV and oral contrast enhanced CT: obturator hernia can be misinterpreted as a mass in the right obturator canal.



Figure 3. IV and oral contrast enhanced CT: obturator hernia; relation with intestine.



Figure 4. IV and oral contrast enhanced CT (coronal reformat): Obturator hernia is clearly seen as a mass next to pelvis within the obturator foramen.

## DISCUSSION

Arnaud de Ronsil first described the obturator hernia in 1724 in Paris at the Royal Academy of Science (Académie Royale des Sciences). Obre performed the first successful operation in 1851<sup>(5)</sup>. Herniated segment proceeds through the obturator foramen situated bilaterally in the anterolateral pelvic wall, anteriorly to the acetabulum. The obturator artery, vein and nerve pass through this tunnel protected by extraperitoneal connective tissue and fat<sup>(6)</sup>. The symptoms are vague and usually in the form of nausea and vomiting or other signs of bowel obstruction such as abdominal pain and a lack of bowel movement can be observed. Literature has shown that up to 80 % of the patients with obturator hernias usually have symptoms of bowel obstruction, which is often partial due to a high proportion of Richter's herniation (partial herniation of antimesenteric wall) of the bowel into the obturator canal<sup>(7)</sup>. If the hernia sac compresses the obturator nerve, it produces the pathognomonic Howship-Romberg sign which refers to the pain with or without paresthesia localised down the anteromedial thigh to the knee upon movement of the hip or thigh. It was reported that 15~50 % the patients of obturator hernia may have positive Howship-Romberg sign<sup>(8)</sup>.

The early diagnosis is challenging when the symptoms and signs are nonspecific. Various imaging examinations such as ultrasonography, herniography and CT scan have been applied to establish the diagnosis. The best imaging tool is CT which has superior sensitivity and accuracy. Bowel segment herniating through the obturator foramen and lying between the pectineus and obturator muscles is a key finding on CT and determines the diagnosis<sup>(9)</sup>. CT also differentiates the obturator hernia from other abdominal masses, such as tumours, haematomas and abscesses. With multidetector CT devices;  $\leq 2.5$  mm-thick thin images of with multiplanar reconstruction may better delineate the size and shape of the hernia sac and associated complications<sup>(2)</sup>. Intravenous administration of contrast medium aids in the exploration of the the vascular supply of the

bowel wall to detect complications such as ischemia. Dilation of small bowel proximal to the hernia is a sign of obstructed hernia<sup>(10)</sup>. Although CT is the gold standard technique for detecting obturator hernia, especially in the absence of oral contrast passage to the herniated loop, and no air within the herniated bowel lumen, it is easily misinterpreted as a soft tissue mass.

The only treatment for obturator hernia is surgery. Intra-abdominal approach through a low midline incision is most commonly used as it can establish the diagnosis, avoid the obturator vessels, expose the obturator ring and facilitate bowel resection if necessary<sup>(10)</sup>.

In conclusion, it should be kept in mind that obturator hernia is a rare but significant cause of intestinal obstruction especially in cachectic elderly women. Mostly, history taking and physical examination do not provide very efficient diagnostic clues for suspected obturator hernia. CT scan is precious to establish preoperative diagnosis. Immediate CT scanning should be considered in cases where inguinal and femoral hernias have been ruled out by clinical examination. Early diagnosis and prompt surgical treatment are essential to reduce the morbidity and mortality.

## REFERENCES

1. Skandalakis LJ, Skandalakis PN, Gray SW, Skandalakis JE. Obturator hernia. *Hernia* 1995;4:425-439.
2. Aguirre D, Santosa A, Casola G, Sirlin C. Abdominal wall hernias: imaging features, complications, and diagnostic pitfalls at multi-detector row CT. *Radiographics* 2005;25:1501-1520. <http://dx.doi.org/10.1148/rg.256055018>
3. Uludag M, Yetkin G, Kebudi A, Isgor A, Donmez AG. A rare cause of intestinal obstruction: incarcerated femoral hernia, strangulated obturator hernia. *Hernia* 2006;10:288-291 <http://dx.doi.org/10.1007/s10029-006-0074-6>
4. Ijiri R, Kanamaru H, Yokoyama H, Shirakawa M, Hashimoto H, and Yoshino G. Obturator hernia: the usefulness of computed tomography in diagnosis. *Surgery* 1996;119:137-140. [http://dx.doi.org/10.1016/S0039-6060\(96\)80160-7](http://dx.doi.org/10.1016/S0039-6060(96)80160-7)
5. Rogers FA. Strangulated Obturator Hernia. *Surgery* 1960;48:394-403.
6. Cai X, Song X, Cai X. Strangulated intestinal obstruction

- secondary to a typical obturator hernia: a case report with literature review. *Int J Med Sci* 2012;9:213-215.  
<http://dx.doi.org/10.7150/ijms.3894>
7. **Mantoo SK, Mak K, Tan TJ.** Obturator hernia: diagnosis and treatment in the modern era. *Singapore Med J* 2009;50:866-870.
  8. **Ziegler DW, Rhoads JE Jr.** Obturator hernia needs a laparotomy, not a diagnosis. *Am J Surg* 1995;170:67-68.  
[http://dx.doi.org/10.1016/S0002-9610\(99\)80256-6](http://dx.doi.org/10.1016/S0002-9610(99)80256-6)
  9. **De Clercq L, Coenegrachts K, Feryn T, Van Couter A, Vandevoorde R, Verstraete K.** An elderly woman with obstructed obturator hernia: a less common variety of external abdominal hernia. *JBR-BTR* 2010;93:302-304.
  10. **Nakayama T, Kobayashi S, Shiraishi K, Nishiumi T, Mori S, Isobe K.** Diagnosis and treatment of obturator hernia. *Keio J Med* 2002;51:129-132.  
<http://dx.doi.org/10.2302/kjm.51.129>