**Small bowel obstruction due to obturator hernia: CT appearance**

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An 85 year old woman presented with diffuse abdominal pain, nausea and bilious vomiting appearing on the morning of admission. She also reported constipation of one week duration. Her past medical history included ischemic heart disease, hypertension, chronic atrial fibrillation and hysterectomy. Physical examination revealed a soft, distended, and diffusely tender abdomen. Laboratory studies were unremarkable. Plain abdominal radiographs demonstrated multiple distended small bowel loops with air-fluid levels compatible with small bowel obstruction. Contrast-enhanced computerized tomography of the abdomen disclosed dilated small bowel loops down to the right pelvis where a transition zone of a collapsed loop was noted to be caught between the right pectineus and obturator externus muscles [Figure].

A small amount of fluid was also seen. A presumptive diagnosis of incarcerated obturator hernia was made. An urgent explorative laparotomy revealed a herniated necrotic loop of small bowel in the right obturator foramen with proximal small bowel distension and a large amount of serotic fluid. The patient underwent small bowel resection with end-to-end anastomosis and OH mesh repair. The postoperative period was uneventful.

**OH** is a relatively rare pelvic hernia with right-sided predilection, occurring mainly in thin, elderly multiparous women. The peritoneal sac and its contents herniate through the obturator canal along the obturator vessels and nerves, and lie between the obturator externus and pectineus muscles; it may be palpable on rectal or vaginal examination. In most cases the sac contains small bowel, but it may also contain appendix, colon, omentum, bladder, uterus, or adnexal tissue. The diagnosis of OH is often difficult to establish due to obscure symptom and signs [1].

Small bowel obstruction due to incarcerated hernia is rare and a preoperative diagnosis can be easily overlooked due to the rarity of this entity, the location of the entrapped loop and the

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**[A]** Contrast-enhanced CT of the pelvis shows dilated small bowel loops (SB) with a transition zone of a collapsed loop pointing towards the right anterior acetabular lip (arrow), entering the obturator canal. The distal segment of the entrapped loop is seen exiting it (arrowhead).

**[B]** A scan 3 cm caudal to (A) shows a fluid filled bowel loop incarcerated in the right obturator canal, between the pectineus muscle anteriorly and obturator externus muscle posteriorly (arrow). A small amount of pelvic fluid is seen (arrowhead).
non-specific presentation. A delay in diagnosis and surgical intervention is associated with high morbidity and mortality [1,2]. Nowadays, CT plays an important role in the evaluation and management of patients with small bowel obstruction, by establishing the correct diagnosis, defining a possible etiology, and by eliciting signs differentiating simple from strangulated obstruction requiring surgical intervention [3,4]. CT diagnosis of a strangulated OH is highly accurate [2,5] and may also allow altering the surgical plan to a preperitoneal approach, thus avoiding the risk of future adhesions. The clinical presentation of small bowel obstruction without an obvious etiology in our patient justified an urgent abdominal CT, which disclosed not only the etiology but also free fluid suggestive of ischemia, which was confirmed surgically. As CT is often performed for various acute abdominal conditions, the radiologist should be aware of this rare entity of strangulated obturator hernia, which may be first diagnosed on CT.

References

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**Capsule**

**Aorta hypertrophy**

In response to stresses such as high blood pressure and myocyte death, cardiac muscle cells can become hypertrophic (enlarged). Under continued stress, however, the ventricular wall can dilate and contract less strongly, leading to congestive heart disease. Several factors are likely to contribute to this progression, although the key mechanisms have yet to be established.

Hara et al. tested whether mast cells, which are associated with heart tissue, could influence the transition from compensatory hypertrophy to heart failure. In a model in which stress was applied by artificial constriction of the aorta, mast cell-deficient W/Wv mice were resistant to chronic systolic overload. Compared to wild-type mice, W/Wv animals exhibited less heart enlargement and perivascular fibrosis. Decreased cardiac pathophysiology was also observed after administration of the mast cell degranulation inhibitor tranilast to normal mice subject to aortic constriction. The authors suggest that mast cells could contribute to heart failure by releasing molecules such as histamine and chymase, which can promote apoptosis of myocytes and structural changes in components of cardiac tissue.


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**Capsule**

**Cloned mice have an obese phenotype not transmitted to their offspring**

Mammalian cloning using somatic cells has been accomplished successfully in several species, and its potential basic, clinical and therapeutic applications are being pursued on many fronts. Determining the long-term effects of cloning on offspring is crucial for considering future application of the technique. Although full-term development of animals cloned from adult somatic cells has been reported, problems in the resulting progeny indicate that the cloning procedure may not produce animals that are phenotypically identical to their cell donor. Tamashiro et al. used a mouse model to take advantage of its short generation time and lifespan. They report that the increased body weight of cloned B6C3F1 female mice reflects an increase of body fat in addition to a larger body size, and that these mice share many characteristics consistent with obesity. They also show that the obese phenotype is not transmitted to offspring generated by mating male and female cloned mice.

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