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Emergency incarcerated obturator hernia repair with biologic mesh in a male patient after ipsilateral hip disarticulation: A case report

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ABSTRACT

INTRODUCTION: An obturator hernia is an uncommon form of abdominal hernia that is difficult to diagnose due to its non-distinct presentation. This case investigates an emergency treatment of an obturator hernia presenting in a patient with an ipsilateral hip disarticulation in a 266-bed community hospital.
PRESENTATION OF CASE: A 53-year old man with a history of a left hip disarticulation 3-weeks prior presented to the emergency department with fever, nausea, vomiting, and diarrhea for the past 5-days. An elevated WBC and presence of gas within the hip stump on CT led to an emergency operation to rule out necrotizing fasciitis within the stump. Opening of the stump incision revealed two herniated loops of small bowel corresponding to the left obturator foramen, revealing the diagnosis of an incarcerated obturator hernia. The bowel was reduced and secured within the hip stump and the defect was covered with Strattice biologic mesh.
DISCUSSION: Obturator hernias are rare and can involve vague symptoms, but it is essential to make an accurate diagnosis and repair the defect on an emergency basis. Obturator hernias may appear in the setting of a hip disarticulation, being caused by iatrogenic anatomic alteration, and can be treated in a community acute care hospital.
CONCLUSION: Being aware of the possibility of obturator foramen herniation and bowel incarceration as part of the differential diagnosis for patients with abdominal pain after a prior hip disarticulation can facilitate prompt diagnosis and reduce morbidity and mortality.

1. Introduction

Obturator hernias are a rare form of ventral wall herniation usually occurring in elderly, thin females and comprise less than 0.1% of all hernia repairs. They result from ventral wall defects through the obturator canal, the 2 × 1 cm passage located within the obturator foramen which contains the obturator nerve and accompanying vessels [1]. The difficulty of diagnosing an obturator hernia results from the non-descript signs accompanying it, including piercing pain located in the obturator region that radiates to the knee due to compression of the obturator nerve, as well as vomiting and abdominal cramping due to intestinal blockage [2,3]. The Howship–Romberg sign is a maneuver involving internal rotation of the lower extremity producing pain in the obturator region, and while it is specific to obturator hernias, it only appears in 15–52% of cases [4]. Computerized Tomography (CT) scans (90% sensitivity) are essential; however, only exploratory laparoscopy provides definitive visualization of herniation [5]. Due to the furtive nature of obturator hernias, they have the highest mortality rates of ventral wall hernias, ranging from 13 to 40% if a strangulated hernia is not treated timely [6].

Hip disarticulations involve amputating the entire lower extremity while altering the anatomy by creating a flap vulnerable to herniation from the gluteus medius and obturator externus to cover the joint capsule [7]. Modern indications include lower extremity traumatic crush injuries, with documented complications including necrosis of the flap and abscess formation [8,9]. After an extensive review of the literature, no other case reports were found that specifically present the case of an obturator hernia after a hip disarticulation.

The work in this case has been reported in line with the SCARE criteria [10].

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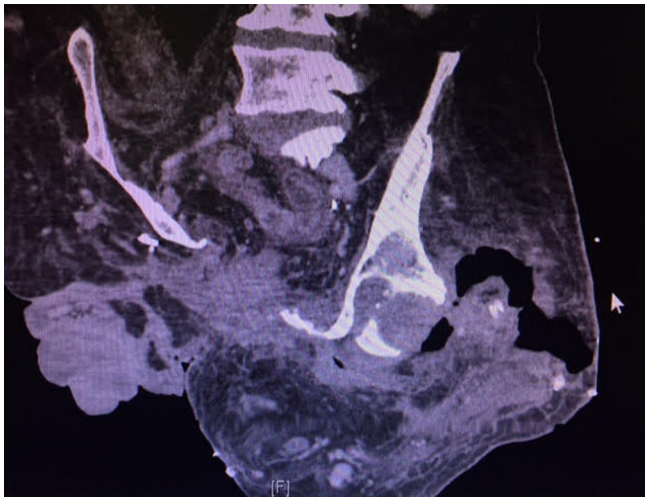

Fig. 1. CT of the pelvis, sagittal view, with large amount of gas in left hip disarticulation stump.

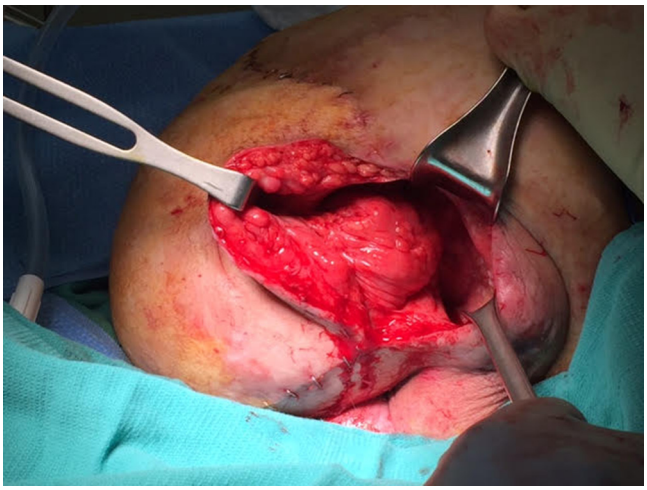

Fig. 2. Exposed small bowel herniating through the left obturator foramen in a left hip disarticulation stump.

2. Case presentation

A 53-year old man with a history of severe peripheral vascular disease and an ischemic left lower extremity underwent a left hip disarticulation by the Orthopedic Surgery service at a different hospital 3-weeks prior to admission. Other significant history includes a prior abdominoperineal resection for distal rectal cancer. He presented to the emergency department with fever, nausea, vomiting, and diarrhea for the past 5-days. Initial vital signs included a blood pressure of 98/67, temperature of 37.8 °C, heart rate of 140, and a respiratory rate of 20. Initial lab values included a WBC of 16.7, a hemoglobin of 11.7, a sodium of 128, an abnormal urinalysis, presenting with positive nitrites, and Gram positive cocci bacteremia. Possible sources of infection included UTI, bacteremia from an old PICC line, and the recovering incision of his left hip disarticulation stump, which had two JP drains producing serous fluid. The patient was started on IV antibiotics by Internal Medicine, on IV fluids, and was sent for a consult with Vascular Surgery to rule out necrotizing fasciitis of the amputation stump with surgical treatment if necessary.

The patient was sent for a CT of the abdomen and pelvis, revealing findings consistent with recent resection of the left lower limb and soft tissue stranding within the subcutaneous fat without definitive drainable abscesses. Gas was present within the left hip surgical stump with no suspicion for an obturator hernia due to the large amount of gas visualized, which in retrospect was intraluminal intestinal gas not distinguished due to lack of enteric contrast (Fig. 1). The patient was taken to the operating room an hour later on an emergency basis by the vascular surgeon. Upon opening of the lateral aspect of the incision, the presence of small bowel was noted, leading to an urgent intra-operative consultation to General Surgery (Fig. 2).

Full exposure of the stump wound revealed two loops of bowel herniating through an orifice 10 cm superior, corresponding to the left obturator foramen (Fig. 3). The loops of bowel were viable and reduced into the pelvis at the point of herniation to be sutured with serosal permanent stitches to the parietal peritoneum of the pelvis at multiple points in preparation for an onlay of Strattice Biologic mesh to repair the hernia. The mesh was circumferentially secured, closing the obturator foramen with appropriate overlap (Figs. 4 and 5). There were no complications and the patient tolerated the operation well. The Clavien-Dindo classification did not apply to this procedure, since he recovered from the hernia repair

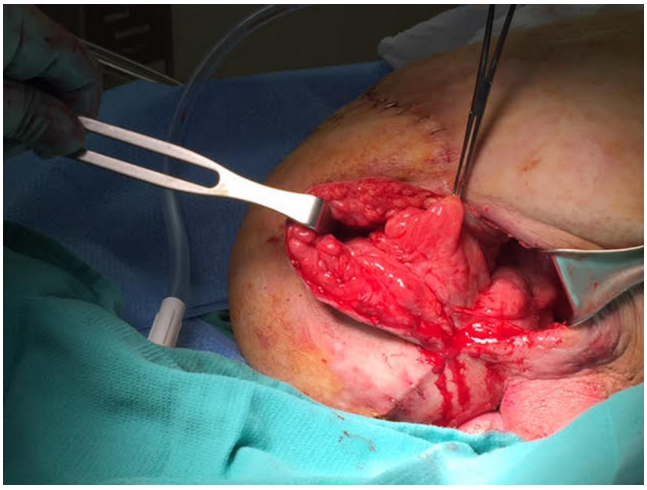

Fig. 3. Incarcerated small bowel loops retracted and dissected prior to reduction into the pelvis through the left obturator foramen.

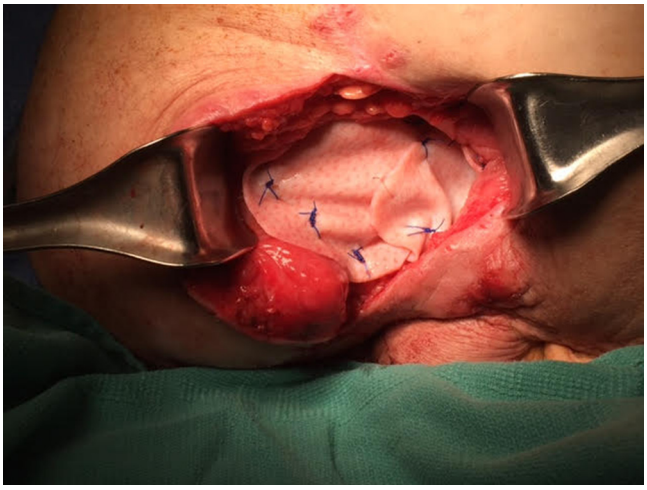

Fig. 4. Onlay of Strattice biologic mesh repair to cover the left obturator foramen seen through the left hip disarticulation amputation stump.