Annals of Clinical Case Reports

Case Report
Published: 22 Aug, 2016

Groin Pain: A Case of a Giant Inguinal Hernia with Duodenal Perforation

Chebl RB[1], Madden B[2] and Iversen C[3]*

[1]*Department of Emergency Medicine, American University of Beirut, Lebanon*

[2]*Department of Emergency Medicine, Memorial Hermann Hospital, Texas*

Abstract

Introduction: Giant inguinal hernias are defined as those extending below the midpoint of the inner thigh, in the standing position. They are extremely rare, accounting for approximately 0.5% of inguinal hernias.

Case Report: We describe a case of a 62-year Hispanic old male who presented to a community hospital Emergency department with groin pain. The patient was found to have a giant inguinal hernia on physical exam. On CT scan, he was found to have duodenal herniation and perforation within the hernia. The patient later developed septic shock and was taken to surgery for operative repair. Despite operative intervention, the patient passed away.

Conclusion: This is a case of septic shock resulting from a herniated and perforated duodenum as well as a review of the literature on giant inguinal hernias and their management in the emergency department.

Keywords: Giant inguinal hernia; Septic shock; Duodenum; Perforation

Abbreviations

CT: Computerized Tomography; mmHg: Millimeters of Mercury; BPM: Beats Per Minute; SaO_2: Oxygen Saturation; WBC: White Blood Cells; ICU: Intensive Care Unit; IV: Intravenous

Introduction

An inguinal hernia is a protrusion of the contents of the abdominal cavity or peritoneal fat througha defect in the inguinal area [1]. The hernia sac contents are at risk of incarceration, which may lead to more serious sequelae such as bowel obstruction, and or a circulatory strangulation of the hernia contents, leading to necrosis and possible perforation of the intestine [1]. The chance of incarceration is relatively low, between 0.3-3% per year [2-4].

Giant inguinal hernias are defined as those extending below the midpoint of the inner thigh in the standing position. These hernias are rare, accounting for approximately 0.5% of inguinal hernias in one study [5]. The aim of this paper is to report on a case of massive strangulated inguinal hernia with duodenal perforation.

Case Presentation

A 62-year-old Hispanic male with a reported history of "testicular elephantiasis" since he was a teenager presented to a small free-standing emergency department with a complaint of groin pain. He stated that he was lifting something heavy two days prior and began having right-sided groin and testicular pain. Furthermore, he was complaining of nausea and vomiting and added that he had not passed gas or had a bowel movement for last two days. Prior to today's visit, he had not seen a doctor in decades.

On arrival to the emergency department he appeared to be in moderate pain. His initial vital signs were as follows: temperature of 36.6°C, heart rate of 126 bpm, blood pressure of 191/119 mmHg, respiratory rate of 21, and SaO_2 of 100 % on room air. His cardiac exam was remarkable for tachycardia. His abdominal exam was remarkable for right lower quadrant and suprapubic tenderness as well as decreased bowel sounds. His genitourinary exam demonstrated a massively distended scrotum extending to his knees with diffuse tenderness worse on right side. His lower extremity exam was unremarkable.

OPEN ACCESS

Correspondence:
Ralphe Bou Chebl, American University of Beirut Medical Centre, Department of Emergency Medicine, Beirut, Lebanon, E-mail: Rb94@aub.edu.lb

Received Date: *20 Jun 2016*
Accepted Date: *18 Aug 2016*
Published Date: *22 Aug 2016*

Citation:
Chebl RB, Madden B, Iversen C. Groin Pain: A Case of a Giant Inguinal Hernia with Duodenal Perforation. Ann Clin Case Rep. 2016; 1: 1090.

Figure 1: X-ray image of the Giant inguinal hernia.

He was given Morphine, Zofran, and a 1L IV fluid bolus. Significant labs were as follows: creatinine 3.4 mg/dL, BUN 36 mg/dL, glucose 135 mg/dL, lipase 2, 141 unit/L, WBC 6.5, Hgb 13.4, lactate 9.9 mMol/L. A CT abdomen/pelvis with oral contrast demonstrated a massive right inguinal hernia containing parts of the stomach, all of the small bowel, part of the colon, as well as free air and fluid suggestive of perforation most likely originating from the duodenum; the appendix was not visualized with certainty (Figure 1 and 2).

He was given Ceftriaxone and Metronidazole intravenously. General surgery was then consulted and transfer was initiated to a higher acuity facility.

After transfer he was immediately taken to the operating room. During surgery he was found to have a large perforation in the second and third portion of the duodenum. He also required resection of the distal small bowel, right colon, and part of the mid transverse colon. Postoperatively he was transferred to the ICU in stable condition.

However the patient began to deteriorate throughout the night. He went into multiorgan failure requiring aggressive IV fluids, dialysis, and multiple vasopressors. Despite these efforts, lactate increased to 29.3 mMol/L and the patient went into asystolic cardiac arrest and passed away.

Discussion

Inguinal hernias account for 75% of abdominal wall hernias; with a lifetime risk of 27% in men and 3% in women [6]. They are often classified as direct or indirect, depending on whether the hernia sac bulges directly through the posterior wall of the inguinal canal (direct) or passes through the internal inguinal ring alongside the spermatic cord following the course of the inguinal canal (indirect) [6]. Inguinal hernias are reducible if they occur with straining and can be pushed back into the abdominal cavity. They are at risk of

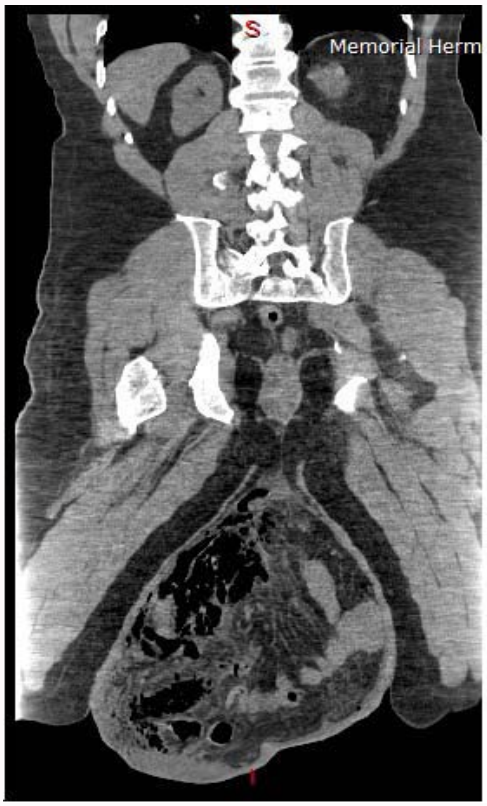

Figure 2: CT scan showing sagittal view of the duodenal herniation.

incarceration, which occurs when the herniated bowel loops remain outside the abdominal cavity. Incarcerated hernia may lead to bowel strangulation and bowel obstruction.

Giant inguinoscrotal hernias are defined as those extending below the midpoint of the inner thigh, in the standing position [5]. The contents of giant inguinal hernias are usually bowel loops, but there are case reports of giant hernias containing stomach, ovaries and the bladder [7-9]. They are usually recurrent hernias and reach large dimensions either because of patients' reluctance to undergo surgical treatment, or because the surgeon's advice against it due to technical difficulties such as cardiorespiratory compromise [5]. Compared to inguinal hernias, the recurrence is much higher in giant inguinoscrotal hernias. These hernias pose a significant amount of morbidity, as patients have voiding difficulty and develop urinary retention [10], as well as scrotal skin thickening and testicular atrophy.

Traditionally giant inguinal hernias are treated with progressive pneumoperitoneum. The recommended method is by injecting 100 to 500mL of air daily over 15 days through an intraperitoneal catheter [10]. Pneumoperitoneum is however not very effective because the air insufflation causes enlargement of the hernia sac, rather than the abdominal cavity. Progressive pneumoperitoneum is however contraindicated in patients with strangulated hernias and infection [11]. As these giant inguinoscrotal hernias are usually chronic, the abdominal cavity adapts to being empty and reduces its size, which is referred to as loss of domain. Sudden replacement of the large bowel contents into the abdominal cavity causes an abrupt increase in intra abdominal and intra thoracic pressure. The increased pressure can lead to an impaired diaphragmatic motion and reduced venous return. Furthermore, the distention of abdominal skin exerts tension on the postoperative wound, which significantly impairs healing [4].

Several case reports have described hemicolectomy, omenectomy, splenectomy, small bowel resection, and even phrenectomyas treatment modalities for giant inguinoscaral hernias [12,13]. The scrotal skin may be left intact because it can be used for decompression if the patient develops respiratory compromise post operatively. The post operative recovery for these patients is characterized by a prolonged duration of elective mechanical ventilation. Ventilation for a minimum period of 10 days in the intensive care unit has been suggested [5].

Given the gravity and acuity of our patient's presentation, he underwent both a small bowel resection and partial colectomy. It is unknown if loss of domain contributed to our patient's decline given he had perforation with spillage of bowel contents at the time of surgery. To our knowledge this is the first case of perforated duodenum into the scrotum. Unfortunately, we could not save this patient despite early surgery and aggressive sepsis treatment. It is likely the patient had lived with a large inguinal hernia for a long period of time, and given the initial labs and vitals, it is very possible he presented soon after perforation. This present case suggests that a strangulated hernia with duodenal perforation into the scrotum has a very high mortality rate despite early and aggressive treatment.

Conclusion

Giant inguinoscrotal hernias are rare but they carry a high mortality and morbidity. The mainstay of treatment remains surgical after proper stabilization of the patient. Several organs can herniate through the sac and it is important to note that small bowel can perforate into the hernia sac and further worsen the mortality.

References

1. Simons MP, Aufenacker T, Bay-Nielsen M, Bouillot JL, Campanelli G, Conze J, et al. European Hernia Society guidelines on the treatment of inguinal hernia in adult patients. Hernia : the journal of hernias and abdominal wall surgery. 2009; 13: 343-403.
2. Gallegos NC, Dawson J, Jarvis M, Hobsley M. Risk of strangulation in groin hernias. Br j of surg. 1991; 78: 1171-1173.
3. Post S. [Against the principle surgical indications in inguinal hernia]. Der Chirurg; Zeitschrift fur alle Gebiete der operativen Medizen. Dec 1997; 68(12):1251-1255; discussion 1256-1257.
4. Hodgkinson DJ, McIlrath DC. Scrotal reconstruction for giant inguinal hernias. Mayo Clinic proceedings. 1982; 57: 383-386.
5. Karthikeyan VS, Sistla SC, Ram D, Ali SM, Rajkumar N. Giant inguinoscrotal hernia--report of a rare case with literature review. International surgery. 2014;99 : 560-564.
6. Jenkins JT, O'Dwyer PJ. Inguinal hernias. Bmj. 2008; 336: 269-272.
7. Weitzenfeld MB, Brown BT, Morillo G, Block NL. Scrotal kidney and ureter: an unusual hernia. The Journal of urology. Mar 1980;123(3): 437-438.
8. Udwadia TE. Stomach strangulated in inguinal hernia presenting with hematemesis. International surgery. 1984; 69: 177-179.
9. Birnbaum DJ, Gregoire E, Campan P, Hardwigsen J, Le Treut YP. A large inguinoscrotal hernia with stomach content. ANZ journal of surgery. Jan 2011; 81(1-2): 86-87.
10. Tahir M, Ahmed FU, Seenu V. Giant inguinoscrotal hernia: case report and management principles. International journal of surgery. 2008; 6: 495-497.
11. Moreno IG. Chronic eventrations and large hernias; preoperative treatment by progressive pneumoperitomeum; original procedure. Surgery. 1947; 22: 945-953.
12. Coetzee E, Price C, Boutall A. Simple repair of a giant inguinoscrotal hernia. International journal of surgery case reports. 2011; 2: 32-35.
13. Patsas A, Tsiaousis P, Papaziogas B, Koutelidakis I, Goula C, Atmatzidis K. Repair of a giant inguinoscrotal hernia. Hernia : the journal of hernias and abdominal wall surgery. 2010; 14: 305-307.