Large spigelian hernia: A case report

Linus Eze, Kenneth Agu, Stephen Edino

ABSTRACT

Introduction: Spigelian hernia is a rare variety of ventral abdominal hernia accounting for less than 2% of all abdominal hernias. Preoperative diagnosis is usually difficult and patients may present with intestinal obstruction. Treatment involves patient optimization and repair of the hernia. The latter is achieved either by open or laparoscopic technique with or without mesh. Outcome is usually excellent.

Case Report: We report an unusually large spigelian hernia (20x30 cm) with an obvious ventral swelling in a 79-year-old female with malnutrition and uncontrolled diabetes mellitus. There was no associated intestinal obstruction. At operation, contents of the sac included viable small bowel, omentum, part of transverse colon, lower stomach, cecum and vermiform appendix. She was stabilized, had an open repair without mesh and was followed-up for eight months without signs of recurrence or other complications.

Conclusion: Spigelian hernia is rare and preoperative diagnosis difficult in the majority of cases. Occasionally, like in this case, an obvious ventral swelling was present making diagnosis easier. Repair of the hernia was done by open technique without use of mesh due to the narrow defect on the abdominal wall.
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Keywords: Abdomen, Hernia, Large, Spigelian

INTRODUCTION

Spigelian hernia is the protrusion of pre-peritoneal fat, a sac of peritoneum or an organ through a defect or weakness in the spigelian fascia [1]. This hernia derives its name from Josef Klinkosch who was the first to describe it and named it after the Belgian anatomist Adriaan Van der Spieghel who was the first to describe the semi-lunar line as reported by Mittal et al. [2].

Most spigelian hernias protrude from the linea semilunaris where it meets the arcuate line, the point from which the posterior rectus sheath is deficient downwards. This area is also known as spigelian hernia belt and is located in a transverse band lying 0 cm to 6 cm, below the umbilicus but cranial to a line running between both anterior superior iliac spines where the spigelian fascia is widest [3]. However, spigelian hernia has been reported to occur above the umbilicus [4].

The incidence of spigelian hernia is about 0.12% of all abdominal hernias occurring between 4th and 7th decades of life [5]. Most patients are over 50 years of age with a male: female ratio of 1.1:1.8 giving a slight female preponderance. Because the hernia, especially when small, is located between tissue planes, it has been described as interparietal, interstitial, or intermuscular hernia.
The defect or weakness in the spigelian fascia can be congenital or acquired. The acquired variety may arise from factors that lead to increase in intra-abdominal pressure such as weight lifting, pregnancy and parturition, chronic cough, constipation and abdominal obesity. Also operations with insertion of drain or laparoscopic ports within spigelian fascia may predispose to herniation.

The hernias are usually small and lie between different muscle planes making them inconspicuous and difficult to diagnose preoperatively. The hernia sac may contain omentum, small intestine, part of the colon, inflamed appendix or incarcerated Meckel’s diverticulum [6].

CASE REPORT

A 79-year-old female presented with a five year history of right ventral abdominal swelling with occasional abdominal discomfort. Initially, the swelling was small, mildly painful and disappeared on lying down. It gradually increased to approximately 20 cm by 30 cm at presentation. There was no associated change in bowel habit or other gastrointestinal symptoms. There was no history of cough, fever or past abdominal surgery. She had eight pregnancies but with only two surviving daughters both of whom were married. Due to poverty, she had no means of seeking and obtaining medical assistance and presented at a free rural medical program at her village from where she was referred for management under the sponsorship of a humanitarian organization. On physical examination, she was elderly, malnourished, pale, depressed and with poor general health. She had a blood pressure of 200/110 mmHg with a pulse rate of 80 beats/minute.

The chest was clinically clear. The abdomen revealed a large protruding irreducible swelling on the right side measuring approximately 20 cm by 30 cm in the widest dimensions (Figure 1). There were visible peristalsis and exaggerated bowel sounds. A wide defect was felt below the umbilicus and lateral to the right rectus abdominis muscle and measured 8 cm in diameter. A diagnosis of large irreducible spigelian hernia was made.

Laboratory investigation results showed a packed cell volume of 40%, normal electrolytes, urea and creatinine, glycosuria (3+), fasting blood glucose 380 mg/dl. Plain chest radiograph showed aortic unfolding but clear lung fields and abdominal ultrasonography noted bowel gas and peristalsis in the sac.

The patient was admitted and treatment for her diabetes mellitus and hypertension commenced. She was commenced on subcutaneous insulin which was converted to intravenous insulin added to 5% glucose infusion and potassium chloride intraoperatively. She was given oral nifedipine for the hypertension which was administered on the morning of operation and immediate postoperative period with little quantity of water.

The patient was counseled and consent obtained for operation. In the theatre, her diabetes control was continued with glucose/insulin/potassium infusion. Under general anesthesia with cuffed tracheal intubation and good muscle relaxation a transverse incision was made over the mass.

The fibres of external oblique muscles were split to get to the hernia sac with a narrow neck (Figure 2). This was opened revealing viable small bowel, omentum, part of transverse colon, lower stomach, cecum and vermiform appendix held by minimal adhesions which were released by sharp/blunt dissection. The contents of the sac were returned to the peritoneal cavity and the former was trimmed down to the neck and closed using continuous Vicryl 2/0 suture. The aponeurotic tissue around the remarkably narrow spigelian fascial defect was approximated over the closed sac with non-absorbable (nylon 0) suture. Subsequently, the wound was closed in layers without drainage.

Postoperatively, patient had a rapid and uneventful recovery and was discharged on the 10th postoperative day. She has been followed-up for eight months and has remained well with no hernia recurrence.
DISCUSSION

The case been reported was a female which is in keeping with an earlier report that gave a female to male ratio of 1.8:1.1. Also the patient was aged 74 years when she first noticed the hernia putting her in the upper limit of most reported cases that occurred between the 4th and 7th decade.

Most spigelian hernias are small and the symptoms are usually non-specific. The first presentation may be from intestinal obstruction owing to the narrow and rigid borders of the fascial defect. In this case, it was a relatively large protuberant hernia and the diagnosis was obvious with the defect palpated at the lateral border of the right rectus abdominis muscle. Most of the reported hernias occurred on the right side.

Diagnosis of spigelian hernia is difficult due to its rarity and paucity of specific symptoms. Only about 50% of cases are diagnosed preoperatively. Diagnosis can be facilitated by use of ultrasonography or CT scan [7]. However, CT scan provides greater sensitivity and specificity. This uncommon hernia with its diagnostic difficulty may mimic other lesions around the affected site in the abdominal wall including rectus sheath hematoma, seroma, peritoneal abscess, lipoma, or peritoneal tumor implants.

The most common content of the sac is omentum, but intestine, appendix, gallbladder, or ovary has been reported in literature [6, 8]. In our patient presumably due to the large size, it contained viable small bowel, omentum, part of transverse colon, distal stomach, cecum and vermiform appendix.

Urgent repair of spigelian hernia is recommended because of high risk of intestinal obstruction and strangulation. In most cases, it is possible to directly approximate the fascia to close the defect but cases with large defect will require use of prosthetic mesh. This repair can be accomplished by open technique which we utilized or laparoscopically [9]. In our case, though the hernia was unusually large, the neck of the sac and the fascial defect was quite narrow making it easy to co-apt the firm edges of the aponeurosis adequately without tension using nylon 0.

CONCLUSION

Spigelian hernias are rare, commonly small and carry a high risk of complication because of difficulty with preoperative diagnosis. However, when large like in the index case, diagnosis is relatively easy and repair by open technique can effect a cure.

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Author Contributions

Linus Eze – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Kenneth Agu – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Stephen Edino – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor
The corresponding author is the guarantor of submission.

Conflict of Interest
Authors declare no conflict of interest.

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