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CASE STUDY

INCARCERATED MECKEL'S DIVERTICULUM IN A SPIGELIAN HERNIA: A RARE CASE REPORT

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ABSTRACT

Josef T.K. Linkosh was first to refer this condition as a hernia in 1764. This hernia is also known as interparietal, interstitial, intermuscular or intramural hernia as it is usually located between the different muscle layers of the abdomen. Spigelian hernia is rare and its diagnosis is difficult because of its location and vague symptoms. As these hernias are situated between the muscular layers and are not obvious, therefore may be overlooked. The presence of strangulated meckel's diverticulum in obstructed spigelian hernia is very rare phenomenon. C.T. scan and ultrasonography are helpful and diagnostic in surgical management of these patients. Surgery remains the only option and various surgical modalities available, are discussed in this article. As the condition is quit uncommon it is important to have high index of suspicion to diagnose the condition. The article is being presented for its rarity and clinical interest.

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INTRODUCTION

Spigelian hernia defect is either congenital or because of weakness in spigelian fascia (Spangen,. 1984). Adriaan Vander Spieghel described Spigelian line also known as semilunar line. Henry-francis Le Dan described spontaneous rupture along the semilunar line in 1742, but Josef T.K.Linkosh was first to refer this condition as a hernia in 1764. This hernia is also known as interparietal, interstitial, intermuscular or intramural hernia as it is usually located between the different muscle layers of the abdomen. Incidence of spigelian hernia is only 1-2% of all hernias and has preponderance for females (Paranbath, 2012). Majorities of these hernias occurs in spigelian hernia belt where the spigelian fascia is widest and weakest (Ray, 2002). This is a transverse belt lying 0-6cm cranial to a line running between anterior superior iliac spines. Spigelian hernia usually occurs below the umbilicus close the level of arcuate line. Abdominal C.T confirms the diagnosis (Hiller, 1994) and the definitive treatment is surgical repair either open or laparoscopic (Fisichella, 2007 and Richards, 2004). Many techniques including laparoscopic approach have been described and are discussed in the present article. The case is being presented for its rarity and clinical interest.

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Case Report

A 38 year old female patient presented in the surgery out patient department, with features of intestinal obstruction i.e. distension of the abdomen, obstipation and vomiting for the last 48 hours. Patient also gave history of a vague, reducible, intermittent lump at the left abdominal flank since last two years, before it became irreducible and painful 48 hours back. On examination there was a tender, round, swelling, of the size of approximately 4"x4" over left abdominal flank, which was irreducible (Fig.1).

The patient had probably undergone some gynaecological surgery four years ago, as there was a lower midline scar present on the abdomen (Fig.1). On the basis of these findings, a provisional diagnosis of obstructed incisional hernia was made. On CT examination, a diagnosis of Obstructed spigelian hernia was revealed and the patient was operated for the same. A left spigelian hernia was confirmed as the swelling was below the layers of the abdominal muscles (Fig. 2) which were split to expose the spigelian hernia (Fig. 3). The sac was opened to note the contents. A loupe of small intestine was found obstructed at the neck of the sac which also contained omentum (Fig.4). An incarcerated meckel's diverticulum was found (Fig. 5), with the strangulated segment of the gut having intestinal strictures of Garre, two rings or circular strictures

one each at afferent and efferent loop (Fig. 6). The viability of the gut could not be ensured. After all the means to retrieve the gut failed, resection anastomosis of the gangrenous segment of the gut was done (Fig. 7). The hernial defect was closed with no.1 polyglycolic suture. The repair was completed with placement of drain. The patient was discharged after an uneventful post operative period of 5 days and was without any symptoms at a follow up after 3 months. The case is being reported here for its rarity and clinical interest. The literature is also reviewed.

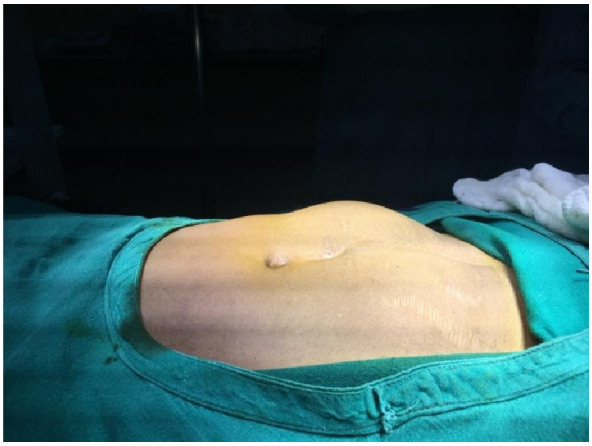

Fig.1. Left abdominal flank swelling and lower midline scar

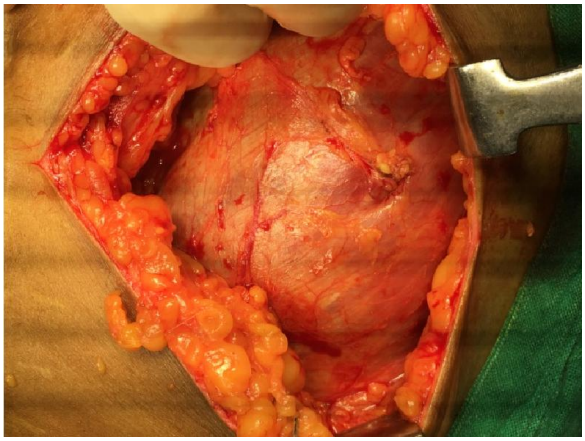

Fig.2. Spigelian hernia below abdominal muscles

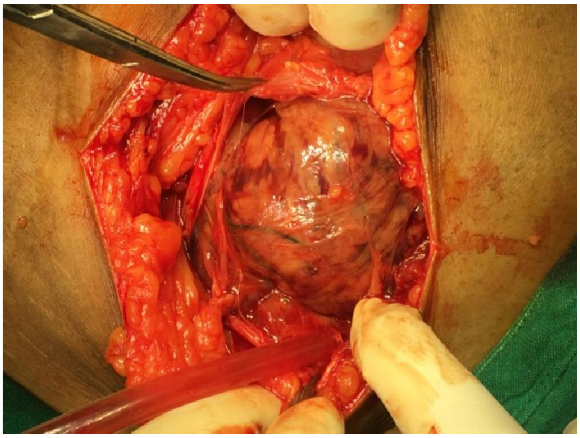

Fig.3. Contents of spigelian hernia exposed after splitting the muscles

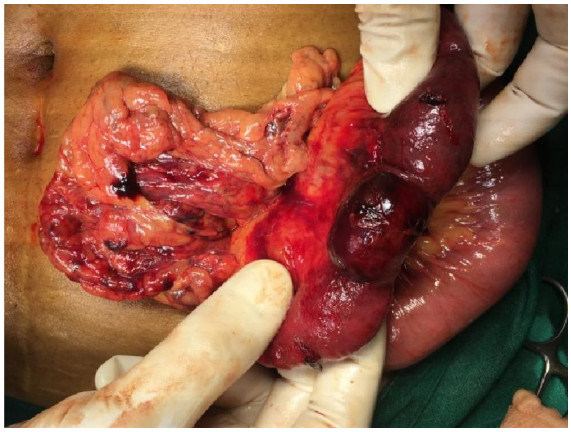

Fig.4. Obstructed loop of small intestine with omentum and incarcerated meckel's diverticulum in spigelian hernia

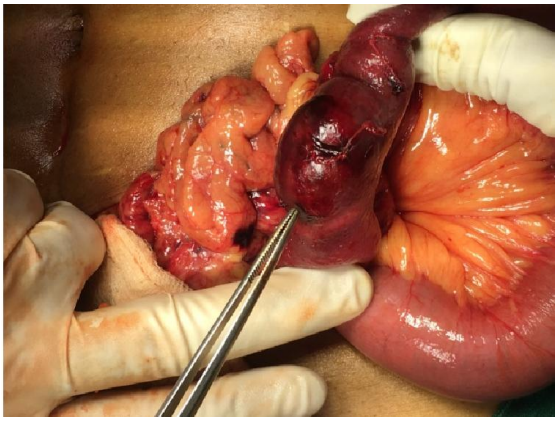

Fig.5. Incarcerated meckel's diverticulum

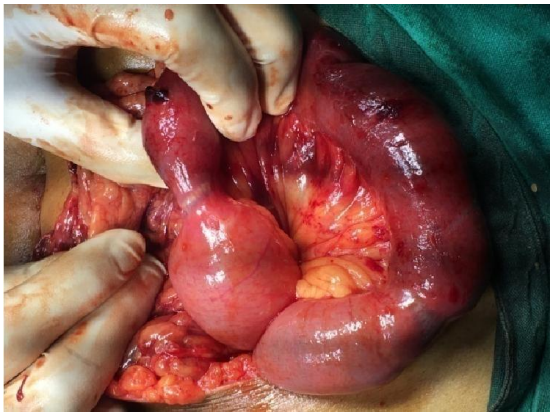

Fig.6. Intestinal strictures of Garre

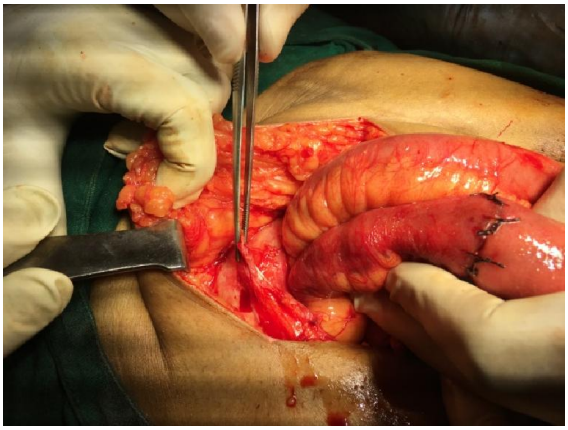

Fig.7. Resection and anastomosis of small intestine

DISCUSSION

The spigelian hernia is a rare ventral hernia and though the mainstay of diagnosis remains clinical examination with the existence of this condition in mind, yet most of the times the clinical diagnosis needs to be confirmed either by USG or CT scan. The clinical diagnosis becomes easier if there is a palpable mass along the spigelian aponeurosis, as was the case in the present patient (Fig.1) but the presence of lower abdominal scar of previous surgery (Fig.1) lead us to consider a provisional clinical diagnosis of incisional hernia! The search of the literature reveals that most of these patients are elderly with mean age of 61yrs (Vos, 2004) but our patient was only 38 years of age, comparatively younger, but a 27 years old female patient having Spigelian hernia has also been described in the literature (Foster, 2015), may be that the previous surgery in this patient is contributory for this early age of presentation. Preponderance for the female gender (Vos, 2004) has been documented and this patient was also female. The diagnosis becomes more difficult in obese patients (Abbas, 2014) though the present patient was not obese. Pain is the most common symptoms in these patients and in the present case, history of intermittent pain for few months is present until the pain became continuous for the last 48 hours prior to admission, indicating obstruction/irreducibility. Intermittent palpable mass and pain is the commonest symptoms, as was seen in this patient also. Symptoms are usually non-specific, altered bowel habits, as was noted in the present case could also be one of the symptoms (Ruiz, 2010 and Larson, 2002).

In a reported series of 25 patients 5 patients had undergone previous gynaecology and urology surgery, only 1 patient out of 25 was of congenital spigelian hernia and the rest were acquired spigelian hernia (Vos, 2004). The present patient has also undergone a gynaecological surgery four years back. The possibilty of incisional hernia in this patient was considered on clinical grounds, provisionally, on the basis of previous lower abdominal surgery (Fig.1), 4 years back but the C.T diagnosis of spigelian hernia was confirmed by operative findings (Fig. 2 and 3), In fact Incisional hernias in the spigelian fascia are not termed as spigelian hernia though some authors have considered these hernia as spigelian hernia (Rehman, 2000). Some of the authors suggest that upto 50% of spigelian hernias occur in patients who had had prior abdominal surgery (Baucom, 2009) and that is where the presenting case also fits in. As the swelling is hidden by the overlying external oblique aponeurosis, hence becomes clinically confusing: In an another series of 76 patients at the mayo clinic, it was concluded that diagnosing these hernia by mean of physical findings alone is difficult (Larson, 2002). USG and CT are very useful investigation for the diagnosis of this condition. The sensitivity of ultrasonography was 83% and C.T was 100% (Vos, 2004). Herniography has also been used, CECT is the best diagnostic test (Hiller, 1994). The usual contents of this hernia are pre peritoneal fat, omentum, small intestine and part of colon. These hernias may rarely have inflammed appendix or incarcerated meckel's diverticulum (lin, 2000; Dixon, 2000; Carr, 1998 and Lossanoff, 2001) , as in the present patient, where an incarcerated meckel's diverticulum was present (Fig.5), thus making it as one of the very rare types. The incarceration ratio of spigelian hernia has been reported to be around 20% (Spangen, 1989 and Nozoe, 1999). Presence of Richter hernia having strangulation of part of the bowel wall circumference, in spigelian hernia has also been reported in the literature (Foster, 2015). Other common contents reported are small intestine, as in the present case, caecum and sigmoid colon. Bilateral spigelian hernia are rare, (Hiller, 1994; Fisichella, 2007; Richards, 2004 and Miller, 2008). The differential diagnosis of the condition includes rectus sheath haematoma, seroma, pareital abscess (Raveenthiran, 2000), lipoma, tumour implants and pseudocyst at the end of ventriculo-peritoneal shunts. The spigelian hernia can be confused with diverticulitis and malignancy of abdominal organs has also to be included in differential diagnosis. None of these entities were seen in the present case, though we did consider a possibility of an Incisional hernia, therefore the authors will like to include Incisional Hernia as one of the differential diagnosis for spigelian hernia. Risk factors for spigelian hernia include COPD, obesity, collagen vascular disorder and congenital defects. Pneumoperitoneum created in laparoscopic surgery possibly creating a tear in the spigelian aponeurosis has also been attributed as another risk factor. The present case had none of these co morbidities and conditions, except a previous gynaecological surgery which might be included as a risk factor!

Surgical repair remains the mainstay of the treatment of spigelian hernia and emergency surgery is indicated in cases of suspected obstruction or strangulation as was done in the present case, where resection anastomosis of the incarcerated gut was undertaken (Fig.7). Primary closure in layers with No.1 vickryl, was done in the present case, as we were able to easily achieve the closure of the hernial defect, without any tension, moreover as the operated area seemed susceptible to infection because of the presence of gangrenous and strangulated gut, the mesh repair was not considered. Primary repair of the defect without mesh, has been reported to be a procedure of choice in a main series (Vos, 2004), where out of 25 patients 20 patients were treated with primary repair and mesh was used in 5 patients only. laparoscopic surgery was not done in any of these cases of spigelian hernia, in an another series (Abbas, 2014). In an another reported work, Primary surgical repair was done without any recurrence in all such patients and early recurrence was noted in only 1 patient out of 25 patients during the mean follow up of 6.1 years (Foster, 2015). In a prospective controlled trial, 22patients of spigelian hernia were randomized to either open or to laparoscopic elective repair with mesh. It was reported that the laparoscopic technique had lower morbidity and showed faster recovery, (Moreno-Egea, 2002). Repair with biological mesh has also been recommended in these cases if the defect is large (Foster, 2015).

Conclusion

The clinical diagnosis of the entity may be very challenging as the symptoms may be variable and non –specific. If the hernia produces a palpable mass at the site of spigelian aponeurosis the diagnosis is easier, only if the possibility is suspected and considered. As the condition is quit uncommon it is important to have high index of suspicion to diagnose the condition.

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