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# SPIGELIAN HERNIA : A CHALLENGING DIAGNOSTIC DILEMMA

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**ABSTRACT**

**INTRODUCTION:** Spigelian hernia (SH) occurs through slit like defect in the anterior abdominal wall adjacent to the semilunar line. Most of the Spigelian hernias occur in the lower abdomen where the posterior sheath is deficient. The hernia ring is a well-defined defect in the transverses aponeurosis. The hernial sac, surrounded by extraperitoneal fatty tissue, is often interparietal passing through the transversus and the internal oblique aponeuroses and then spreading out beneath the intact aponeurosis of the external oblique. Spigelian hernia is in itself very rare and more over it is difficult to diagnose clinically. It has been estimated that it constitutes 0.12% of abdominal wall hernias. The spigelian hernia has been repaired by both conventional and laparoscopic approach.

**METHODS:** The study was carried out in 8 cases of Spigelian hernia admitted to the Surgery Department of MGM Medical College & Hospital, Jamshedpur between November,2009 and April,2016. All the cases with confirmed diagnosis of SH were included in this study. The diagnosis of SH was based on clinical symptoms and signs. Data of patients like age, sex, clinical features including duration, vital signs, physical findings and laboratory data, ultrasound, chest x-rays, computerized tomography scan and outcomes of treatment and complications were recorded in a pre-prepared questionnaire.

**RESULTS:** In this study, eight patients of Spegilian hernia were admitted in MGM Medical College Hospital, Jamshedpur from November,2009 to April, 2016. Out of these 8 patients 7 were females. Most patients (62.5%) were in their 4th and 5th decade. 6 patients presented with abdominal lump and pain while 2 were asymptomatic. Patients frequently reported an intermittent palpable mass/lump in all 8 patients, only pain in 6 or both in 6 cases. The Spigelian hernia was situated on the right side in 06 (75%) patients and on the left in 02(25%) cases .Diagnosis was confimed clinically in most of the cases but Ultrasonography and CT Scan were useful in difficult cases. Seven patients underwent open repair with primary closure of the hernia. In the remaining one patient a large hernia was repaired using a mesh technique.

**CONCLUSION:** Spigelian hernias are rare disease entity. The diagnosis of Spigelian hernias is not always straightforward, especially when a mass is not palpable or the patient is very obese. It should be suspected more frequently ,than only, the diagnosis can be made correctly.

**KEYWORDS** Spegilian hernia, diagnostic dilemma

***Introduction***

Internal abdominal hernias present a rare and challenging diagnostic dilemma for the surgeon. Although accounting for 1% of all hernias they account for up to 5.8% of all bowel obstructions and as such are of significant clinical importance [1].

**Spigelian hernia (SH) is a variety of abdominal wall hernia occurring through a slit like defect in the anterior abdominal wall (semilunar line) at the level of arcuate lines. It is a very rare with approximately thousand cases reported in literature.** Spigelian hernias account for only 0.12–2% of all abdominal wall hernias[2].

Spigelian hernias occurs through slit like defects in the anterior abdominal wall adjacent to the semilunar line which extends from the tip of the ninth costal cartilage to the pubic spine at the lateral edge of the rectus muscle inferiorly. Most of spigelian hernias occur in the lower abdomen where the posterior sheath is deficient. It is also called "spontaneous lateral ventral hernia" or "hernia of semilunar line". The hernia ring is a well-defined defect in the transversus aponeurosis.

The diagnosis of a Spigelian Hernia is difficult; few surgeons suspect it, it has no characteristic symptoms, and the hernia may be interparietal with no obvious mass on inspection or palpation. Spigelian hernias present as either a lateral abdominal wall mass that is reducible and has a cough impulse or if incarcerated may present as visceral abdominal pain. Palpation of a lump can be unreliable due to coverage of the hernia by the external oblique muscle [3]. A high index of clinical suspicion must be maintained as 9 out of 17 cases in a series by Artioukh and Walker were not suspected pre-operatively [4]. CT imaging of a Spigelian hernia is by far the most accurate diagnostic method of demonstrating a hernia defect passing through the muscular layers [5] though ultrasound scanning can demonstrate hernia defects in the abdominal wall and bowel contained within them in the right hands [3].

In adults they are considered acquired and result when abdominal fat protrudes between a separation of internal oblique muscle and transversus muscle fibers. This may occur secondary to pregnancy, chronic cough, straining and morbid obesity due to a raised intra-abdominal pressure or abdominal operations [6].

Treatment of Spigelian hernia is operative repair once the diagnosis has been confirmed.

Spigelian hernias necessitate surgical repair due to their high rates of strangulation, incarceration and intestinal obstruction [7]. Surgical repair may be either direct closure through an abdominal incision or with mesh. Recently laparoscopic repair preperitoneal of these hernias has been shown to reduce hospital stays morbidity [8].

The purpose of this study was to evaluate the incidence, presentation and long-term efficacy of surgical treatment of Spigelian Hernia in this institution.

***Materials and methods***

The study was carried out in 8 cases of Spigelian hernia admitted to the Surgery Department of MGM Medical College & Hospital, Jamshedpur between November,2009 and April,2016. All the

cases with confirmed diagnosis of SH were included in this study. The diagnosis of SH was based on clinical symptoms and signs. Symptoms varied from abdominal pain, lump in the anterior abdominal wall or history of incarceration given by the patient with or without intestinal obstruction.

Data of patients like age, sex, clinical features including duration, vital signs, physical findings and laboratory data, ultrasound, chest x-rays, computerized tomography scan and outcomes of treatment and complications were recorded in a pre-prepared questionnaire.

***RESULTS***

Eight patients with Spigelian Hernia between November, 2009 and June, 2016 were included in this study. There was female preponderance (7 females and 1 male patients) in this study with female to male ratio was 7:1.

The age ranged from 30 to 60 years (mean age 37 years). The 31 – 40 years age group showed the highest incidence constituting to 5 (62.5%) of the cases. Age and sex distribution is shown in Table – 1.

**Table – 1 : Age and sex distribution of patients with SH**

| Age (in years) | Males | | Females | | Total | |
|---|---|---|---|---|---|---|
| | Number | % | Number | % | Number | % |
| 31-40 | 00 | 00 | 05 | 62.5 | 05 | 62.5 |
| 41-50 | 00 | 00 | 02 | 25.0 | 02 | 25.0 |
| 51-60 | 01 | 12.50 | 00 | 0.00 | 01 | 12.5 |
| Total | 01 | 12.50 | 07 | 87.5 | 08 | 100 |

All patients presented with lump abdomen but 6 patients (6/8) had abdominal pain and two (2/8) were asymptomatic. Out of 6 patients with abdominal pain, 4 patients with Spigelian Hernia were diagnosed on clinical examination and two patients were diagnosed on radiological examination (Ultrasound, CT Scan). Two patients (2/8) presented with occult hernias which were asymptomatic. One patient presented with a concomitant umbilical hernia.

Patients frequently reported an intermittent palpable mass/lump in all 8 patients , pain in 6 or both in 6 cases. Pain was described as local, discontinuous and postural in 6 patients.

The clinical profile of the patients is depicted in Table – 2

| Symptoms & Signs | No. Of Patient | Percentage |
|---|---|---|
| Lump in the Abdomen | 08 | 100 |
| Pain abdomen | 06 | 75 |
| Local tenderness | 06 | 75 |
| Irreducibility | 03 | 37.5 |
| Vomiting | 02 | 25 |

The spigelian hernia was situated on the right side in 06 (75%) patients and on the left in 02(25%) cases. Figure - 1 and 2.

**FIGURE - 1 Showing Spegilian Hernia**

**FIGURE-2 SHOWING ANOTHER VIEW OF SPEGILIAN HERNIA**

SHOWING

The interval between the onset of symptoms and diagnosis varied from 2 days to 6 years. 06 patients had experienced symptoms for more than 6 months.

In 6 patients the spigelian hernia was operated on after combining the patient's history with a typical physical examination; additional imaging techniques were considered unnecessary. In the remaining 02 patients ultrasonography or computed tomography (CT) aided the diagnosis. The sensitivity of ultrasonography and that of CT was excellant. Seven patients underwent open repair with primary closure of the hernia (Figure-3 to 6). In the remaining one patient a large hernia was repaired using a mesh technique. Laparoscopic techniques were not used.

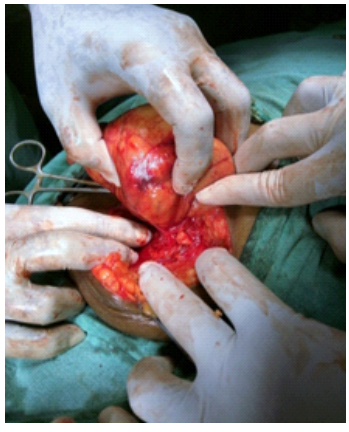

**Figure – 3 Showing narrow Neck Of The Sac**

**FIGURE - 4 Sac containing omentum**

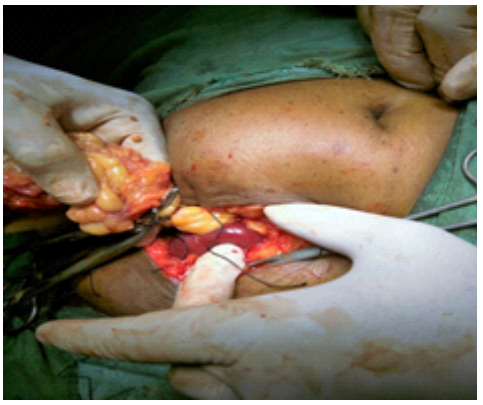

**FIGURE – 5 Showing omentum from Narrow ring of the Hernia**

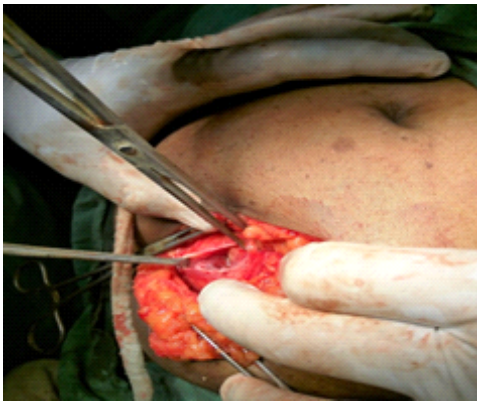

**FIGURE -6 Showing orifice of the Spegilian Hernia**

***DISCUSSION***

Spigelian hernia is named after Adriaan van Spieghel, who described the semilunar line. However, the hernia was first described by Klinkosch in 1764 [9]. In my study the hernia was predominantly seen in 4th and 5th decade and a female preponderance was noted ( male to female ratio : 1:7 ).In some studies the hernia appears to peak in the 4th to 7th decades and they found male to female ratio 1:1.18 [10]. Spigelian hernias are very uncommon and constitute only 0.12% of all abdominal wall hernias [2].

Spigelian hernia can be congenital or acquired [11]. Perforating vessels may weaken the area in spigelian fascia and a small lipoma or fat enters here which gradually leads to hernia formation. Spigelian hernia may be related to stretching in the abdominal wall caused by obesity, multiple pregnancies, previous surgery or scarring [12]. In this study all the female patients were multiparous and their parity could be one reason of Spigelian hernia.

The spigelian aponeurosis is widest between 0 and 6 cm cranial to the interspinous plane and 85-90% of the hernias occur within this "spigelian hernia" belt. The hernial ring is a well-defined defect in the aponeurosis. The hernial sac, surrounded by extraperitoneal fat, is often interparietal passing through the transversus and the internal oblique aponeuroses and then spreading out beneath the intact aponeurosis of the external oblique, or lying in the rectus sheath alongside the rectus muscle.

The diagnosis of a spigelian hernia is difficult; few surgeons suspect it. **The diagnosis of spigelian hernia presents greater difficulties than its treatment. The clinical presentation varies, depending on the contents of the hernial sac and the degree and type of herniation. The lump, which is the most common symptom, varies and there is no typical pain of spigelian hernia. Findings to facilitate diagnosis are palpable hernia and a palpable hernial orifice. Large, easily palpable spigelian hernias are not a diagnostic problem. It is small hernias and hernial orifices that are overlooked because they are masked by the subcutaneous fat and an intact external aponeurosis. In the absence of a palpable orifice or sac, persistent point tenderness in the spigelian aponeurosis with a tensed abdominal wall most strongly suggests the diagnosis. Spigelian hernia can be ruled out in patients without palpable tenderness.** It has no characteristic symptoms, and the hernia may be interparietal with no obvious mass on inspection or palpation. Only 50% of cases are diagnosed preoperatively [13,14]. But in my study all were diagnosed preoperatively . Out of 8 patients , 6 were diagnosed clinically and 2 were diagnosed with the help of ultrasonography and CT Scan. It may present as a swelling adjacent to the iliac crest. The patient may have a classic lump when he/she stands up. The lump is painful if the patient stretches and disappears on lying down. Sometimes the local discomfort can be confused with peptic ulceration. Rarely the hernia can enter the rectus sheath and can be confused with spontaneous rupture of rectus muscle or with a hematoma in the rectus sheath.

**Ultrasonographic finding was found satisfactory in the diagnosis of both palpable and nonpalpable spigelian hernia. On CT Scan the hernial orifice and sac were well visualized, which gives more detailed information on the contents of the sac than does ultrasonic scanning**.

A Spegilian hernia may be confused with a lipoma or parietal abscess [15], appendicitis and appendiceal abscess, a tumor of the abdominal wall or a spontaneous hematoma of the rectus sheath or even acute diverticulitis [16].

Spigelian hernias are treacherous and have a real risk of strangulation. The risk of strangulation is higher because of sharp fascial margin around the defect. For this reason, surgery should be advised in all patients.

Surgery can be performed either by open technique or by laparoscopically. 7 out of 8 cases in this study were taken for open surgery without prolene mesh. Only one case which had large sac and large neck needed prolene mesh repair. None were treated Laparoscopically. Spangen recommended simple closure of the defect in the form of herniorrhaphy [17]. Nozoe et al, 1999 performed a simple hernioplasty by suturing the internal oblique and transverse muscles to the rectus sheath [18].Development of mesh and concept of its tension free application to other hernias, by Lichtenstein, led to its use by many for Spegilian hernias[19,20]. Carter and Mizes performed first intraabdominal laparoscopic repair of spigelian hernia in 1992 [21]. They used sutures to close the defect. After that there have been multiple reports of successful management of spigelian hernia by laparoscopy [21,22,23,24]. In these reports, mesh is placed either intraperitoneally or extraperitoneally after creating a peritoneal flap by trans abdominal approach.

Patients came for follow up and no evidence of recurrence has been noted till date in this study.

***CONCLUSION***

The accurate diagnosis of SH is often difficult and can be attributed to its rarity and the absence of classical symptoms coupled with a lack of personal clinical familiarity. It can simulate a variety of other commoner lower-quadrant abdominal diseases. The anatomical location contributes to the diagnostic difficulty. Its diagnosis should be made more frequently , so that it is never missed. And for the correct diagnosis the surgeon should have it in his mind , then only it will not be missed.

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