



The Spigelian Hernia

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52.1 Introduction

The spigelian hernia is probably the most famous of all “rare” hernias. It was named after Adriaan van den Spiegel, an anatomist from Brussels who first described the semilunar line, but it was Klinkosch more than a century later (1764) who actually referred to this type of hernia for the first time. Josef Thaddäus Klinkosch was an anatomist from Prague, and his opus magnum “Programma Quo Divisionem Herniarum” is fully available at Google Books and a true treasure of medical history.

The spigelian hernia is a defect on the intersection of linea semilunaris and arcuata where the fasciae of the internal oblique and the transverse abdominal muscles form the spigelian aponeurosis. This zone is also termed “spigelian hernia belt” by some authors. It has been suggested that the transgression of vessels creates a “locus minoris resistentiae” leading to the formation of this small but often symptomatic hernia.

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52.2 Epidemiology

The prevalence is approximately 1–2% of all hernias. Spigelian hernias mostly occur on the right side of the abdominal wall. Patients are generally affected between the fourth and seventh decade of life with a proposed slight predilection of the female sex [1].

52.2.1 Symptoms

The leading symptom of a spigelian hernia is the local pain by intercurrent incarceration, increasing with contraction of the abdominal wall muscles. This is noteworthy as, unlike in many other hernias, a swelling or protrusion is not easily detectable. The anatomical reasons are twofold: the hernia sac is small (usually only about 0.5–2 cm in diameter) and does often not protrude through all layers of flat abdominal muscles as depicted in Figs. 52.1, 52.2 and 52.3. In consequence, palpation of the small hernia defect can be difficult even for experienced explorers. In most cases, the hernia sac contains a lipoma, but incarceration of small bowel and even the appendix (the latter more frequent in patients suffering from Crohn’s disease) can occur. Other symptoms include nausea and vomiting and all signs of a manifest ileus [2]. A rare finding is an (inflamed) appendix in a spigelian hernia, an ovary and fallopian tube, and, most exotic, a gallbladder volvulus in the spigelian hernia sac [3–5].

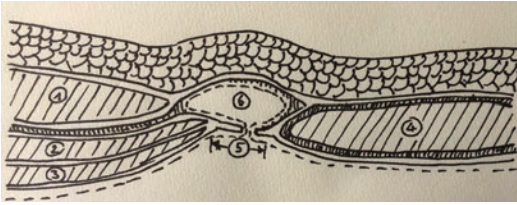


Fig. 52.1 Spigelian hernia sac entering space between rectus and external oblique muscle 1, M. obliquus externus; 2, M. obliquus internus; 3, M. transversus abdominis; 4, M. rectus abdominis; 5, Spigelian hernia belt with locus minoris resistentiae (hernia defect); Hernia sac with its content



Fig. 52.2 Spigelian hernia penetrating the rectus sheath, as well as space between M. rectus and external oblique muscle



Fig. 52.3 “Most user-friendly” variation of spigelian hernia, with hernia fully transgressing spigelian fascia as well as fascia of external oblique muscle

52.3 Imaging

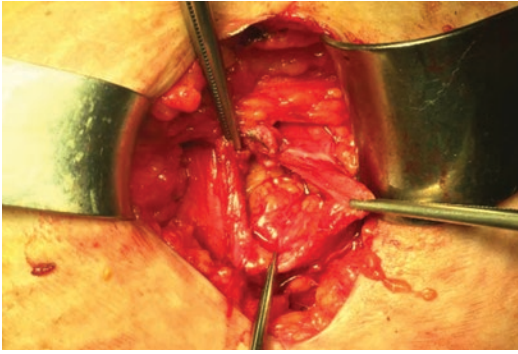
In a chronic setting, usually an ultrasound will be sufficient to confirm the diagnosis. When difficult, the diagnostic should be performed in the standing patient, Valsalva maneuver included. However, because the hernia defect is small and investigators might not be aware of the differential diagnosis of a spigelian hernia when exploring the patient for an appendicitis, or adnexitis,

it can be overlooked with this modality. Other differential diagnoses sometimes confounded with the hernia include hematoma of the rectus muscle and diverticulitis. In case of an acute onset of symptoms, e.g., incarceration, or remaining uncertainties, a CT scan should provide the correct diagnosis [6]. In difficult or unclear cases, an MR imaging can be performed additionally.

52.4 Treatment

52.4.1 Conventional, Open Approach

The classical, open approach consists of inverting the hernia sac and primary closure of the hernia defect with nonresorbable, running sutures. The major drawback of this technique is the unavoidable aspect of adding traction to an area which is at an intersection of traction forces per se. This makes the open approach using sutures alone prone to recurrence formation. Furthermore, detection of a spigelian hernia can be tricky even in open technique; often it is required to incise the aponeurotic fascia of the external oblique muscle and trace the hernia sac which usually is embedded between the muscles (see Figs. 52.1, 52.2 and 52.3). In consequence on the subcutaneous level, no trace of a hernia can be present on the exposed abdominal wall. After detection and following the hernia sac to its base, the hernia orifice can be identified. The placement of mesh in open technique improves outcome and patient satisfaction. There are no conclusive data from robust studies whether onlay or sublay techniques should be favored. It can be necessary to widen the fascial defect in order to liberate the hernia sac/lipoma. The placement of a mesh in a sublay position often requires to open the rectus sheath in order to have a sufficient overlap of the mesh over the defect medially (5 cm are required in all directions; see Picture 52.1). The ventral rectus sheath then can be closed in line with the external oblique fascia. In the opinion of the authors, sublay mesh placement should be preferred over onlay techniques.



Picture 52.1 In an obese, 60-year-old lady, a painful swelling in the right lower abdomen was palpable, and a spigelian hernia was suspected clinically. The diagnosis was confirmed in a CT scan. Surgery was performed in open technique (because of a preexistent large laparotomy due to bowel surgery). Although a $6 \times 7 \times 7$ cm large mass of omental fat was incarcerated, it was not before incision of the fascia of external oblique muscle that the hernia sac and its content could be detected during the operation. The preparation included the enlargement of the hernia defect in the spigelian fascia in order to liberate the content of the hernia sac, which was consequently resected, the defect (about 2 cm in diameter) closed with running prolene suture and a mesh (round-shaped 8 cm in diameter) placed in sublay position and fixed with vicryl—a redon drainage (CH 12 was placed in the mesh compartment for 48 h). The aponeurotic fascia of the external oblique muscle was closed with a running Monomax® suture. The patient received a single-shot antibiotic prophylaxis 1.5 h before start of the operation. Operation time was 45 min. Figures 52.1, 52.2 and 52.3 (© with the authors, courtesy of Dr. Gruber-Blum). Figures 52.1, 52.2 and 52.3 illustrate the most common varieties of spigelian hernias, with Figs. 52.1 and 52.2 emphasizing to always explore the area underneath the fascia of the external oblique muscle

52.4.2 Laparoscopic Approaches

Laparoscopy nowadays is considered the standard of care, and this makes especially sense in the spigelian hernia which can be so reluctant to detection [6]. Spigelian hernias can be approached both in TAPP and TEP technique. Similar to inguinal hernia repair, the transabdominal access allows exploration of the abdominal cavity, which might be a real advantage when it comes to identifying other possible causes of pain in the area (adhesions, appendicitis, adnexitis). It is noteworthy that the mesh placement should always be performed preperitoneally and that

opening of the peritoneum and dissection will often be mandatory to precisely locate the small hernia defect. At our department we use a triangular trocar position in the left middle abdomen and over the symphysis for right sided and a trocar in the right middle abdomen for left sided spigelian hernias. In the rare case an inguinal and a spigelian hernia is suspected, we use standard TAPP trocar position. There is no satisfying literature on the issue, but it seems logical that mesh fixation then can be achieved with tacks or sealants when a sufficient overlap is provided. The peritoneum should be closed with running suture or cyanoacrylate glue. As demonstrated in inguinal TAPP, fibrin sealant alone is not appropriate for the closure of the peritoneum.

52.4.3 Robotic Repair

If available, robotic spigelian hernia repair is feasible as it offers convincing degrees of freedom in terms of preperitoneal, retromuscular operations.

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