ELSEVIER

Ambulatory Surgery 9 (2001) 127–129

Ambulatory Surgery

www.elsevier.com/locate/ambsur

Spiegelian hernia: ambulatory surgical treatment

C. Zaragoza *, F. Peiró, H. Bebek, S. Castaño, R. García Aguado, M. Vivó, C. Martinez

Jefe de la Unidad de Cirugía Mayor Ambulatoria, Tercer piso, pabellón izquierdo, Hospital General Universitario de Valencia, Avda. Tres Cruces, s/n, 46014 Valencia, Spain

Received 1 March 2001; accepted 2 May 2001

Abstract

Purpose: Spiegelian hernias (SH) represent only 2% of abdominal hernias. Treating ten outpatient cases motivated both the presentation of our experiences and a review of diagnostic and surgical treatment procedures. Predisposing factors, clinical presentation, diagnostic methods, surgical procedure, time spent in the Unit and the postoperative course have been analysed. *Results:* a predisposing factor was observed in eight patients. In four cases patients suffered abdominal pain, non-specific discomfort occurred in three and in six a mass was observed. Ecography in four patients and a computerised scan (CT) in two cases confirmed the diagnosis. Herniorrhaphy was performed in two patients, hernioplasty with a mesh in seven cases and a double polypropylene mesh was used once. There was no morbidity and the average length of time in the Unit was 99.3 min. To date no recurrences have been reported. *Conclusion:* SH is associated with several predisposing factors. Diagnosis can be difficult due to location and non-specific symptoms. Clinical examination is essential for diagnosis, with complementary examinations such as an ecography and/or CT.

Keywords: Spigelian hernia; Surgery with no hospital admission; Ambulatory surgery; Hernia of the abdominal wall

1. Introduction

Spiegelian hernia (SH), recognised for the first time by Josef T. Klinkosh [1] in 1764, is a rare defect, representing only 2% of the abdominal wall hernias [2]. It is a pathology, which presents difficulties in preoperative diagnosis due to its location within the abdominal wall and its non-specified clinical presentation.

The term SH is derived in honour of Adrian Van Der Spiegel, an anatomist who was born in Brussels (1576–1635) and was first to recognise the semilunar line. It has further been referred to as the lateral ventral hernia or 'semilunar hernia'. The hernia occurs through the Spiegelian fascia: the anatomic region located between the Monro line (spinal and umbilical), the interespinal line, the Spiegelian line and the external edge of the rectus abdominis muscles, where the wall provides decreased resistance (Fig. 1). According to various authors [3], the anatomic weakness of the Spiegelian fascia can be explained through several theories: (A) the fibres of the internal oblique muscle and the transversus abdominis muscle interbreed at a supraumbilical level, whilst following parallel directions at an infraumbilical level. (B) At the level of the semicircular line or Douglas's line, all muscular fascia of the anterolateral abdominal wall become anterior to the rectus abdominis muscles, the aponeurosis of the tranversus abdominis muscle and the internal oblique muscle interbreed and weaken remarkably, thus creating a suitable point for the development of a hernia [4]. The fibres of the external oblique muscle keep their consistence, consequently, the hernia is often observed under the fascia of this muscle [5]. (C) The epigastric artery crosses the tranversalis fascia protruding into the fascia of the rectus abdominis muscle at the level of its external edge and the inferior edge of the Douglas line, creating a space, which could enable the development of a sliding hernia.

* Corresponding author.
E-mail address: zaragoza_cri@gva.es (C. Zaragoza).

0966-6532/01/$ - see front matter
PII: S0966-6532(01)00107-X

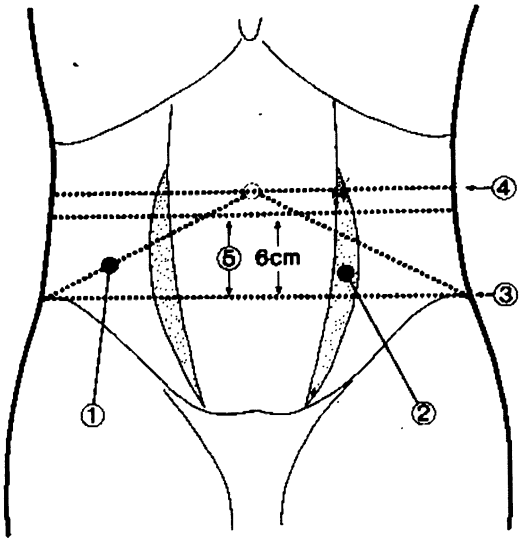

Fig. 1. (1) Monro line. (2) Spigelian Fascia. (3) Interspinal level. (4) Umbilical level. (5) Areas of the Spigelian Hernias

The aim of this article is to present the experience obtained in our Ambulatory Surgical Unit with regards to the diagnosis and the treatment of this uncommon condition.

2. Material and methodology

Over 2 years (May 1998–May 2000), 1259 hernias of the abdominal wall were diagnosed and operated on in the Ambulatory Surgical Unit of the University General Hospital, Valencia. Ten (0.79%) of these were Spiegelian hernias. The average patient age was 60.8 years (range 42–89) with an even representation of both sexes and both sides of the abdomen.

The following were analysed: predisposing factors (obesity, repeated pregnancies, constipation, chronic obstructive lung disease, ascites, previous laparotomies); the association with other hernias of the abdominal wall; clinical presentation (pain, mass, non-specific symptoms, subocclusions); diagnosis (through physical examination and complementary techniques); surgical procedure (use or non-use of mesh implants); morbidity, length of admittance to hospital and postoperative monitoring.

3. Results

In nine out of ten patients there was a predisposing or associated risk factor. Of the five male patients, three exhibited previous abdominal surgery (appendicectomy, inguinal and umbilical hernia), one showed criteria of obstructive chronic lung disease whereas no risk factors were observed in the fifth patient. The five female patients all reported previous pregnancy, four suffered abdominal pain and three experienced non-specific discomfort. A defect in the abdominal wall and the presence of a reducible mass were observed in six patients.

Ecography was performed in four cases in order to confirm the diagnosis. Abdominal CT accurately diagnosed in two cases the presence, location and contents of the hernia. In all patients, the diagnosis was preoperative. The operation was executed under local anaesthesia with 0.5% Lidocaine (100 mg), sedation (1 mg Midazolan and 2 g Magnesium Metamizol) and monitored anaesthetic care (blood-pressure, pulse oximeter and electro-cardiogram) using anaesthetics such as Propofol® and Remifentanilo® with perfusion pumps. Surgery was approached through the pararectal tract, which constituted in the opening of the fascia of the external oblique muscle. Reduction of hernia contents and ordinary herniorrhaphy were required on two occasions, a polypropylene mesh was placed in seven cases and a double mesh (preperitoneal and supraponeurotic) was employed in one case.

Patients were discharged from hospital on the same day with no postoperative complications, with an average stay in the Unit of 99.3 min. There was no morbidity or mortality. No recurrences have arisen to date.

4. Discussion

SH predominantly affects patients in the fifth decade of their life onwards, with the same frequency in both sexes, equal distribution on both sides of the abdomen. Exceptionally SH may be bilateral [6].

Clinical presentation is variable and may be non-specific. The most frequent symptoms are abdominal pain and/or a palpable anterior abdominal wall mass. Complications such as intestinal subocclusion [7,8], incarceration [9] and strangulation [10] may be the initial presentation.

The diagnosis of these hernias can be difficult due to their location (under the fascia of the external oblique muscle) and due to their non-specific symptomatology, especially in obese patients.

Differential diagnoses include lipomata, bruises, rectus myotendinitis, neoplasias of the abdominal wall, abscesses, acute appendicitis and diverticulitis. If the hernia is of reasonable size and normal contents a plain X-ray will show a gaseous image [11] through intestinal entrapment.

Ecography reveals the fascial defect near the semilunar line or the presence of a moveable mass under the external oblique muscle [11]. CT provides a more accurate representation than an ultrasound scan, thus remaining the first choice since it enables observation of the defect in the fascia and identification of the sac and its contents [12].

Treatment is always by surgery in order to avoid complications. If the hernia is not palpable, an approach through a paramedian incision with preperitoneal dissection is highly recommended [13]. However, if it is palpable a cutaneous incision over the hernia is preferable, opening the fascia of the external oblique muscle following the direction of the fibres, dissection and treatment of the hernia sac, and finally, closing the fascial defect. Results following ordinary closure are satisfactory and the use of a reinforced mesh implant is reserved for wide hernia orifices, relapses or parietal debilities [14]. Another technique that has been used for repair is the positioning of a preperitoneal plug [15]. Over recent years, a few cases of laparoscopic repair, with or without implant material, have been reported [16]. SH repair has a low morbidity and recurrences are infrequent [7–13].

References

[1] Klinkosh JT. Divisionem hernirum novamque hernia ventralis proponit. Dissertatium Medicorum, 1764, p. 184.
[2] Weiss Y, Lernau OZ, y Nissan S. Spiegelian hernia. Ann Surg 1974;180:836–9.
[3] Testart J, Bismuth H. Hernies de la ligne de Spiegel. Encycl Méd Chir (París) 1981;10(40150):4–5.
[4] Holder LE, Schneider MJ. Spigelian hernias: anatomy and roentgenographic manifestations. Radiology 1974;112:309–13.
[5] Gomez Portilla A, Hernandez Lizoain JL, De Oca J, y Zornoza G. Hernia de Spiegel. Aportación de tres nuevos casos. Rev Esp Enferm Ap Digest 1987;71(3):247–9.
[6] Pastore S, Vitale L, De Rosa A, Vecchio G. A rare case of bilateral spigelian hernia. Minerva Chir 1998;53(9):735–7.
[7] Zaragoza C, Villalba S, Castaño S, Trullenque R. Hernia de Spiegel. Cir Esp 1996;59:165–7.
[8] Benito MP, Valderrama JE, Gonzalez FJ, Muniain JM. Intestinal occlusion and spigelian hernia. J Clin Gastroenterol 1999;29(2):213–4.
[9] Nozoe T, Funahashi S, Kitamura M, Ishikawa H, Suehiro T, Iso Y, Matsumata T, Sugimachi K. Ileus with incarceration of Spigelian hernia. Hepatogastroenterology 1999;46(26):1010–2.
[10] Brahmbhatt D, Floger R. Colonic obstruction secondary to incarcerated spigelian hernia: report of a case. Dis Colon Rectum 1990;33:305–7.
[11] Balthazar EJ, y Subramanyam BR. Radiographic diagnosis of Spiegelian hemia. Am J Gastroenterol 1983;78:525–8.
[12] Miller PA, Mezwa DG, Feczko PJ, Jafri ZH, Madrazo BL. Imaging of abdominal hernias. Radio Grafics 1995;15:333–47.
[13] Adell R, Salvador JL, Laguna M, Navarro J, Gilbert J, Escrig J, et al. Hernia de Spieghel. Formas de presentación clínica y alternativas terapéuticas. Cir Esp 1996;60:22–4.
[14] Dabán F, Capitan J, Jimenez J, Mezquita S, Nogales J, Cobo G. Hernia de Spiegel. Nuestra experiencia. Cir Esp 1992;52:69–72.
[15] Sanchez-Montes I, Deysine M. Spigelian hernias: a new repair technique using preshaped polypropylene umbrella plugs. Arch Surg 1998;133(6):670–2.
[16] Salvador JL, Laguna M, Adell R, Garcia R, Gilbert J. Reparación de hernia de Spiegel por vía laparoscópica. Rev Esp Enferm Dig 1995;87:759–60.