Traumatic Spigelian Hernia Due to Handlebar Injury in a Child: A Case Report and Review of Literature

Sudhir Kumar Thakur · Salabh Gupta · Saurabh Goel

Received: 27 February 2010 / Accepted: 10 September 2012 / Published online: 18 September 2012
© Association of Surgeons of India 2012

Abstract Traumatic abdominal wall hernia is a rare clinical entity despite the high incidence of blunt abdominal trauma. In children, traumatic abdominal wall injury can occur even after minor trauma without any associated intra-abdominal injury. We report a case of Spigelian hernia due to a handlebar injury in a male child of 9 years, who came for treatment 5 weeks after the injury. Ultrasonography confirmed the clinical diagnosis of traumatic Spigelian hernia. The case was taken up for open surgery and anatomical repair was done with prolene. The patient had an uneventful postoperative course.

Keywords Spigelian hernia · Traumatic hernia · Handlebar hernia

Introduction

Almost 1000 cases of Spigelian hernia have been reported in medical literature so far [1]. Spigelian hernia in children is considered to be an uncommon surgical condition. A total of 43 cases of Spigelian hernia in children younger than 17 years has been quoted in literature in 2005 [2]. Traumatic Spigelian hernia in the paediatric age group is so rare that even after an extensive search of the English biomedical

literature we could barely reach a double figure. This and the delayed presentation in this particular case are the reasons for this case being reported here.

Case report

A 9 year-old boy was brought to our surgery OPD with a reducible swelling measuring 6×4 cm in the right side of lower abdomen (Fig. 1). An impulse on coughing was present in the right lower quadrant and a defect could be felt in the anterior abdominal wall lateral to the rectus muscle and below the umbilicus. When the patient got up, the swelling appeared immediately. He had a history of a fall on the bicycle handle while trying to learn riding, about 5 weeks ago. Following this trauma he developed the swelling, which was very painful and red in appearance. For relief in pain, the parents consulted a local doctor who gave him some medicine. After taking the medicine the pain and redness subsided but the swelling did not regress. Very soon the parents noticed that the swelling subsided during the sleep and appeared when in upright posture. Routine investigations were within normal limits. Ultrasonography revealed a defect of 4×4 cm along the right semilunar line in supine posture, covered with external oblique aponeurosis. No definite sac was visualised. In erect scan, loops of small bowel were visualised occupying the gap. We planned for an open surgery. A transverse incision was made over the defect. On splitting the external oblique aponeurosis, the rent was visible. The peritoneum was so adherent to the undersurface of external oblique aponeurosis that it got opened with external oblique aponeurosis. No viscus was adherent to the overlying external aponeurosis. Both the external and entire internal oblique aponeurosis

S. K. Thakur (✉) · S. Goel
Department of Surgery, Saraswathi Institute of Medical Sciences,
Hapur, Ghaziabad, India
e-mail: thakur_sk@rediffmail.com

S. Gupta
Department of Surgery, Santosh Medical College,
Ghaziabad, India

Fig. 1 Showing 6×4 cm swelling in Rt lower quadrant of the abdomen in upright posture

were seen passing anterior to the semilunar edge of rectus abdominis very clearly (Fig. 2) A plane was created between the internal oblique and the external oblique by sharp dissection with ease. No attempt was made to separate the transverses abdominis from the internal oblique and mobilise the peritoneum. The gap was repaired with prolene 3-0 without any tension. A vacuum drain was put beneath the external oblique aponeurosis and it was then approximated with 3-0 prolene.

Fig. 2 Showing the 4×4 cm defect in anterior abdominal wall. The clear cut edges of external oblique, internal oblique and rectus abdominis muscles are marked x, y and z respectively

Interrupted skin stitches were given with 2-0 silk. The patient had uneventful recovery and has been under regular follow-up for the last 18 months.

Discussion

A Spigelian hernia occurs along the semilunar line, which traverses a vertical space along the lateral rectus border from the costal margin to the pubic symphysis. Adriaan van der Spieghel was the first to accurately describe the semilunar line [1]. The weakest portion of the Spigelian fascia is the area where the semilunar line intersects the arcuate line of Douglas. It is in this region that 90 % of Spigelian hernia is found [3]. The term Spigelian hernia does not just refer to a type of hernia, it also describes the location of hernia [4]. Handlebar hernia is a specific type of traumatic abdominal wall hernia due to impact of the abdominal wall against a blunt object, often bicycle handlebars. The criteria for traumatic abdominal wall hernia include immediate appearance of hernia through disrupted muscle and fascia after blunt abdominal trauma and failure of the injury to penetrate the skin [5]. Both spontaneous and traumatic Spigelian hernia in the paediatric age group is sporadically reported. As far as traumatic Spigelian hernia is concerned, 24 cases have been reported in the literature so far [6]. Diagnosis of spontaneous Spigelian hernia is often missed due to inconspicuous location and unexplained abdominal pain. But the diagnosis of traumatic Spigelian hernia is made comparatively easily on clinical grounds. Ultrasonography is a gold standard for diagnosis of both types of Spigelian hernia [7]. As far as the treatment of traumatic Spigelian hernia is concerned, there is no standard protocol and immediate surgical repair may not always be required. Spontaneous healing may occur if the defect is small and there is no other associated injury [8]. In this case, since the patient had come after a gap of 5 weeks and the defect was sizable, we proceeded with the open surgery. Now Spigelian hernia is being repaired laparoscopically, but the traumatic Spigelian hernia in the paediatric age group being repaired laparoscopically has been reported only recently [9]. We conclude that though traumatic Spigelian hernia is rare, it is easy to diagnose. There can be late presentations, as in this case. Open anatomical repair can be done with rewarding results.

Prior publication None.

Support None.

Conflicts of interest None.

References

1. Javid PJ, Brooks DC (2007) Hernias. In: Zinner MJ, Ashley SW (eds) *Maingot's Abdominal Operations*, 11th edn. McGraw Hill, New York, pp 130–131
2. Vaos G, Gardikis S, Zavras N (2005) Strangulated low Spigelian hernia in children: report of two cases. *Pediatr Surg Int* 21:736–738
3. Montes IS, Deysine M (2003) Spigelian and other uncommon hernia repairs. *Surg Clin North Am* 83:1235–1253
4. Topal E, Kaya E, Topal NB, Sahin I (2007) Giant Spigelian hernia due to abdominal wall injury: a case report. *Hernia* 11:67–69
5. Damschen DD, Landercasper J, Cogbill TH, Stolee RT (1994) Acute traumatic abdominal hernia: case reports. *J Trauma* 36:273–276
6. van Bommel AJM, van Marle AGJ, Schlejen PM, Schmitz RF (2011) Handlebar hernia: a case report and literature review on traumatic abdominal wall hernia in children. *Hernia* 15: 439–442
7. Torzilli G, Carmana G, Lumachi V, Gnocchi P, Olivari N (1995) The usefulness of ultrasonography in diagnosis of the Spigelian hernia. *Int Surg* 80:280–282
8. Litton K, Izzidien AY, Hussien O, Vali A (2008) Conservative management of a traumatic abdominal wall hernia after a bicycle handlebar injury (case report and literature review). *J Pediatr Surg* 43:e31–e32
9. Lopez R, King S, Maoate K, Beasley S (2011) Laparoscopic repair of paediatric traumatic Spigelian hernia avoids the need for mesh. *ANZ J Surg* 81:396–397