ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 15, Issue, 03, pp.24196-24198, March, 2023
DOI: https://doi.org/10.24941/ijcr.44950.03.2023

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

A CASE PRESENTATION OF EXTERNAL PRIMARY SUBCOSTAL HERNIA IN ADULT AFTER CHEST AND ABDOMINAL TRAUMA

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ARTICLE INFO

Article History:
Received 27th December, 2022
Received in revised form
09th January, 2023
Accepted 15th February, 2023
Published online 30th March, 2023

Key words:
Primary Congenital Subcostal Hernia, Xiphisternum, Costal Cartilage.

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ABSTRACT

Primary congenital subcostal hernias are relatively uncommon type of hernia. We present a case of a female patient with a 12-inch-long primary congenital subcostal hernia extending from the right of the xiphisternum to the 10th costal cartilage, obliquely subcostal with a breadth of nearly 8 inches and a hemisphere shape. This case was successfully treated surgically.

Citation: ***Amith Kiran, Chetan Gotur, Naqueebunnisa Rasheed, Satish and Vishwas.*** **2023.** "A case presentation of external primary subcostal hernia in adult after chest and abdominal trauma.*". International Journal of Current Research*, 15, (03), 24196-24198.

INTRODUCTION

Primary congenital subcostal hernias are very uncommon type of hernia. They can be the result of a birth defect and are most frequently seen in infants, but can also present in adulthood. Treatment typically involves surgery to repair the hernia. This type of hernia occurs more anteriorly, in the subcostal region.[1,2] The prevalence of subcostal hernia ranges between 4% and 20%, according to the literature.[3] We present here the successful primary repair of a hernia of this type in an adult patient.

CASE PRESENTATION

A 40-year-old female patient was presented with a history of a road accident resulting in injuries to the abdomen and chest. She was successfully treated for an obstructed Morgagni's hernia surgically. In spite of Morgagni's repair during the post-operative period, the patient had developed continuous abdominal pain and repeated constipation and noticeably, there was a bulge on the right hypochondriac region extending to the right pelvic brim. On palpation, a doughy feel was felt but not reducible. On auscultation, peristalsis was heard. Intestinal contents (colonic contents), a massive right subcostal hernia with cecum, ascending colon, hepatic flexure, part of right transverse colon, terminal ileum, and greater omentum were all visible on a repeat CT abdomen. Hence, considering these findings, the patient was scheduled for surgery (Figure 1 and 2).

INTERVENTION

On the 8th post-operative day (morgagni's repair), it was planned to operate on the right-sided subcostal hernia, which was of huge size, measuring 12 inches in length and extending from the right of xiphisternum to the 10th coastal cartilage, obliquely subcostal with a breadth of nearly 8 inches and having the shape of a hemisphere. (Figure 3) The whole of the hernia was anteriorly covered by the external oblique muscle and its aponeurosis. Making a parallel incision over the external oblique muscle and aponeurosis subcostally, resembling Kocher's incision, hernia contents like the cecum, ascending colon, right hepatic flexure, terminal ileum, omentum, liver margin, and gall bladder pooped out. The hernia margin at the lower end was internal oblique, and the transverse abdominus was fused. The lateral margin appeared the same. The subcostal margin was part of the xiphisternum and the chondral part of the 10th rib. The posterior of the ascending colon, hepatic flexure was in relation to the lower 4 ribs and its chondrum on the right side. The hernia content was irreducible. Part of the omentum was excised, the ascending colon was Kocherized, the right hepatic flexure was done, the contents of the hernia were reduced to the abdomen, and the subcostalhemial margin was identified. Hernia defects were closed with twoTrulene mesh lengths 15x15cm. (Figure 4) A Trulene 2-0 polypropylene suture was used to secure the mesh and hernia margins. The external oblique aponeurosis was closed with a 2-0 Trusynth polyglactin-910 suture.

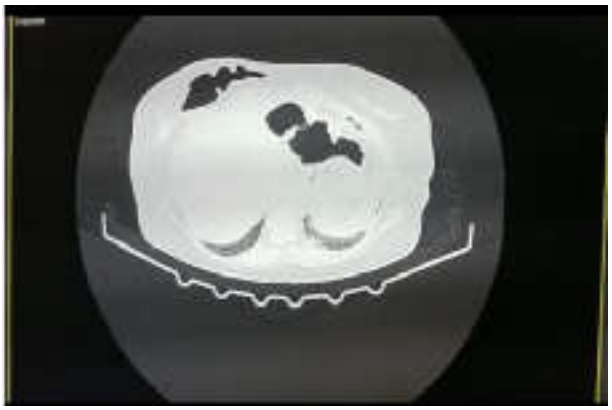

Figure 1. CECT Picture showing extra abdominal parietal content as intestinal loop

Figure 2. Primary subcostal hernia showing mouth of the hernia at subcostal level with hernia contents as intestine, omentum& hernia sac in the pariete in the right abdominal wall

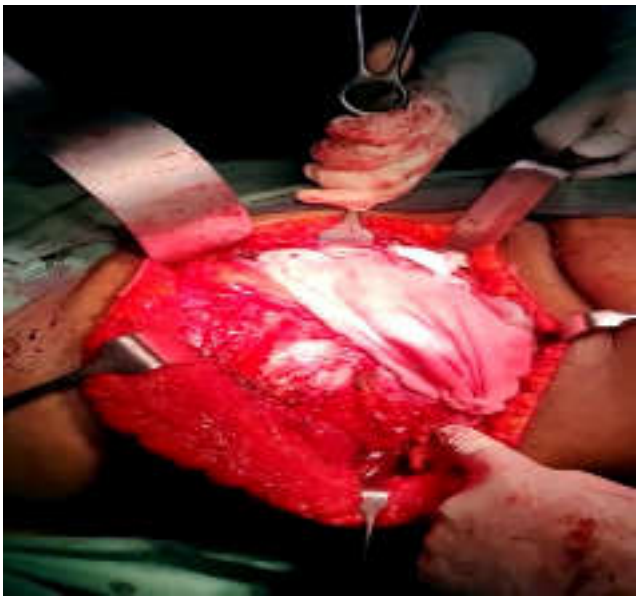

Figure 3. Primary subcostal hernia defect of size 30x15 cm

Subcutaneous fat was closed with 2-0 Trusynth polyglactin—910 suture in 2 layers, and hemostasis was achieved with Trutie ligating clips.

POST OPERATIVE PERIOD

Post-operative period was uneventful and the patient was discharged on Day 14.

Figure 4. Primary subcostal hernia repair using Trulene Mesh

DISCUSSION

Subcostal hernia is a very rare entity that presents as an isolated defect or a complex multisystem defect, the exact etiology of which is still unknown.[4] Our patient was diagnosed with a primary congenital subcostal hernia. We believe the etiology of this hernia is likely due to a genetic defect.The surgery is usually minimally invasive and involves the use of a mesh to reinforce the weakened abdominal wall. Recovery time can vary depending on the size and location of the hernia.Subcostal hernias are more difficult to diagnose and repair due to their anatomical location. Furthermore, they are associated with a higher rate of recurrence than other types of hernia. Anatomy and disease pose a big challenge for surgeons, and a pre-operative contrast CT scan of the abdomen is a great way to figure out how to operate on a patient. Laparoscopic approaches can be utilized in smaller hernia sacs where the contents are fully reducible.

However, if the contents are irreducible, then an open approach is the safest option. An open approach is followed in this study. This approach enables proper dissection of the sac up to the neck before opening it and ensures complete delineation of the neck of the sac. Once the sac is opened, the adherent contents can safely be released and placed back in the peritoneal cavity.[5] Many surgeons routinely use polypropylene mesh for various incisional and inguinal hernias. It is shown to be safe and offers several advantages, such as ease of obtaining, easy handling, low cost, and excellent tolerance, with no significant long term complications.[1] Our study was a variation on the primary congenital subcostal hernia, so we wrote a case report about it.

CONCLUSION

Subcostal hernia can be a difficult condition to diagnose, but despite its rarity, it is important to be aware of the signs and symptoms of subcostal hernia so that an early diagnosis can be made. Treatment options are available to reduce the severity of symptoms, reduce complexity, prevent recurrences, and improve quality of life.

AUTHORS' CONTRIBUTIONS

Each of the authors was involved in preparation of the manuscript: Amith Kiran, Chetan Gotur, Naqueebunnisa Rasheed, Satish, Vishwas participated in conception, drafting and revising the study. The manuscript has been read and approved by all the authors for submission.

CONSENT

Written informed consent was obtained from the patient for publication of this paper and any accompanying images.

ACKNOWLEDGEMENTS

The authors would like to thank the patient for his written consent and permission to present this paper.

DECLARATIONS

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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