CASE REPORT

Abdominal Cocoon Misdiagnosed as Appendicitis – A Case Report

Darpan Bansal[1], Rana Ranjit Singh[2], Jaskirat Kaur[3]

Received on: 01 February 2023; *Accepted on:* 24 February 2023; *Published on:* XX XXXX XX

Abstract

Abdominal cocoon syndrome (ACS), also called sclerosing encapsulated peritonitis, is a rare condition characterized by the encapsulation of all or some small bowel loops by a thick fibrous membrane. This is associated with clinical signs of intestinal dysfunction, recurrent episodes of small bowel obstruction, and infrequently a palpable abdominal lump. The etiologic cause is not fully known. Preoperative diagnosis is difficult, and high suspicion is required. Diagnosis is generally made during a laparotomy performed due to mechanical obstruction. We present the case of a 58-year-old male patient with recurrent episodes of intestinal obstruction and misdiagnosed as chronic appendicitis. Preoperative suspicion of ACS was raised by a computed tomography (CT) scan. The patient underwent laparotomy, and the diagnosis was confirmed as ACS. The required surgical procedure was done and the postoperative period remained uneventful.

Keywords: Abdominal cocoon syndrome, Intestinal obstruction, Laparotomy sclerosing encapsulating peritonitis.

AMEI's Current Trends in Diagnosis & Treatment (2022): 10.5005/jp-journals-10055-0155

Introduction

Abdominal cocoon syndrome (ACS) is a rare condition that causes acute and subacute intestinal obstruction symptoms. It is characterized by complete or incomplete encapsulation of small bowel loops by a thick fibrous membrane. The manifestation of clinical symptoms is dependent upon the extent of the fibrous capsule.[1,2] It is a rare condition that usually presents as small bowel obstruction. It occurs primarily in females with only a few reported cases in males.[3]

It could develop as idiopathic but could also be caused by secondary reasons which trigger fibrous capsule formation such as past abdominal surgery, tuberculosis, and peritoneal dialysis Because of its rarity and lack of specific symptoms, diagnosis is usually made during laparotomy.[4] The aim of the treatment is the excision of the fibrous capsule which leads to fibrosis and relieving of obstruction.[1,4]

Case Report

A 47-year-old male patient presented to our hospital with complaints of recurrent episodes of intestinal obstruction for 8 years for which he used to get admitted to local hospitals where he used to be managed conservatively and discharged. Later, around 5 years ago, he was diagnosed as a case of chronic appendicitis for which he underwent appendicectomy. But his episodes of intestinal obstruction remained unresolved. Finally, he came to our institute with a tender lump in the left lower quadrant of the abdomen. He underwent computed tomography (CT) scan as shown in (Fig. 1) in which suspicion of an abdominal cocoon was raised. Laboratory parameters were normal, and exploratory laparotomy was carried out. During laparotomy, the small bowel was shortened, thickened, and covered with a cocoon-like fibrotic tissue which was involving the majority of the small intestine, caecum and sigmoid colon as shown in (Fig. 2). We performed extensive adhesiolysis by peeling the fibrous pseudo capsule from the small bowel. This resulted in the freeing of the small bowel but also in multiple serosal injuries with diffuse bleeding as shown in (Fig. 3). We had to do resection anastomosis in one place because of the segment being gangrenous. The patient was discharged week after the operation with no complications. On follow-up, there is no history of obstruction. The pathologist reported mononuclear inflammatory cells in the tissue specimen of the fibrous membrane.

Discussion

The abdominal cocoon is also called sclerosing encapsulating peritonitis (SEP) by some investigators.[5] Some investigators also label the abdominal cocoon as SEP, fibrous membrane encasing different lengths of the small intestine causing intestinal obstruction or lump in the abdomen was first explicated as an abdominal cocoon in 1978 by Foo et al.[6] It is of two types primary or secondary. The primary sub kind is most commonly seen in young adolescent females from tropical and subtropical countries. The definite etiology of the inflammatory reaction is still unknown but some studies say that it can occur due to Sub-clinical primary viral peritonitis due to retrograde mensuration or gynecological infections. Male sex was affected maximum in this case which gives little support to the theory that this can occur in males, or

[1–3]Department of Surgery, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, Punjab, India

Corresponding Author: Rana Ranjit Singh, Department of Surgery, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, Punjab, India, Phone no: +91 9876151548, e-mail: gurveer1@gmail.com

How to cite this article: Bansal D, Singh RR, Kaur J, Kaur J. Abdominal Cocoon Misdiagnosed as Appendicitis – A Case Report. AMEI's Curr Trends Diagn Treat 2022;x(x):xx–xx.

Source of support: Nil

Conflict of interest: None

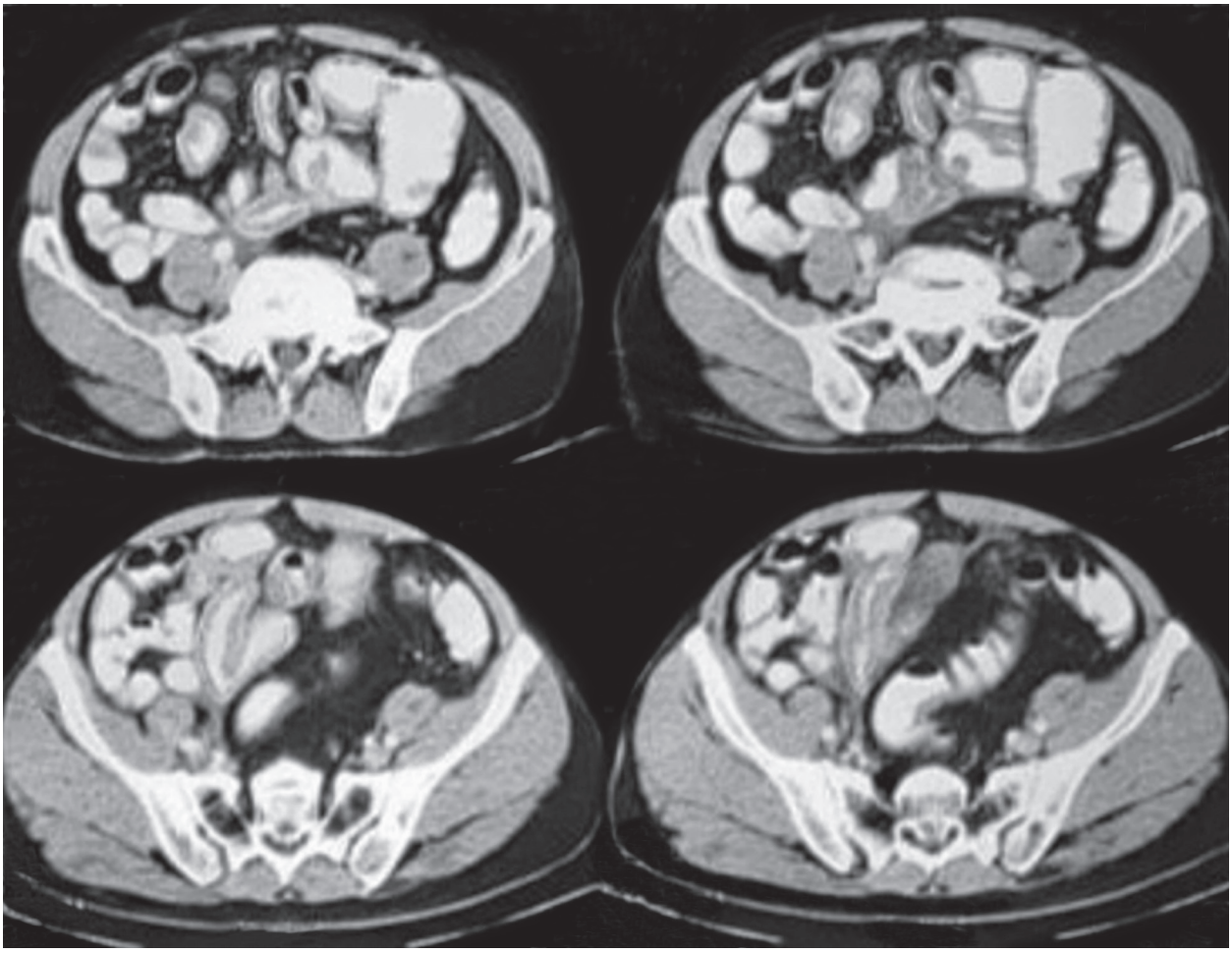

Fig. 1: CT scan raised preoperative suspicion of the abdominal cocoon, because of circumferential thickening of small bowel loops and encasement by fine membrane along with a dilated proximal and mid-ileal loop

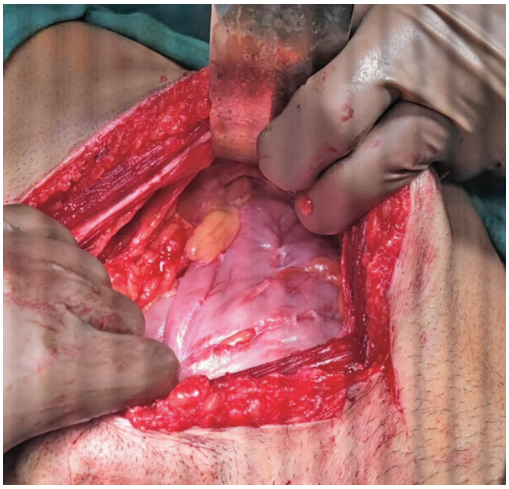

Fig. 2: During laparotomy thickened small bowel loop formed a lump in the lower quadrant of the abdomen

Fig. 3: After extensive adhesiolysis the small bowel freed

menstrual females and children.[7] There is various associations of Secondary SEP, to enumerate these associations few are practolol intake, chronic ambulatory peritoneal dialysis, ventricular peritoneal and peritoneal-venous shunts, systemic lupus erythematosus, liver cirrhosis, intraperitoneal instillation of drugs, uterine leiomyomata, endometriotic cysts, and recurrent peritonitis.[8,9] Several reports from tropical and subtropical countries have described abdominal cocoons in association with abdominal tuberculosis.[9,10]

On the basis of the extent of membrane involved, ACS is classified into three types. If the membrane encloses a part or the entire small intestine it is classified into type I and type II. If apart from small intestine other organs like the stomach, colon, and liver are also involved then it is classified as type III.[11]

Abdominal cocoon syndrome is defined by complete or partial bowel encasement within a thick fibro-collagenous membrane that encases the small intestine in the shape of a cocoon as a result of chronic a result of intra-abdominal fibro inflammatory process. This membrane wraps the gut, fixes it, and finally tightens it, impairing its motility.

Most often, these patients have had previous bouts with the same symptoms, which sometimes go away on their own or with conservative treatment. There are obvious indications of mechanical ileus with the progression of full sclerosis brought on by the formation of a cocoon. When the abdomen is palpated clinically, it is frequently soft. In the middle of the abdomen, there may be a soft, non-tender mass that may be felt that is made up of clumped-up bowel loops. Sometimes these cases were misdiagnosed as adhesive intestinal obstruction, abdominal tumor, or chronic appendicitis.[12] Ultrasound, CT, and magnetic resonance imaging (MRI) imaging findings are frequently vague. However, a CT scan is the preferred examination because it can detect peritoneal thickness, intestinal obstruction signs, and clustering and fixation of the intestinal loops.[13] Furthermore, a definitive diagnosis of this condition is made intraoperatively only, followed by histological analysis. An early preoperative diagnosis and treatment of this syndrome are vital to preserve the circulation of the encased bowel segments and reduce the risk of strangulation.

Conclusion

Abdominal cocoon syndrome is uncommon and challenging to diagnose. It is preferable for surgeons to be aware of the condition, and a preoperative diagnosis that combines a clinical examination and radiologic tests may be made easier. Patient prognosis can be improved by appropriate surgery and afterward care.

Patient Consent Statement

The author(s) have obtained written informed consent from the patient for publication of the case report details and related images.

Orcid

Rana Ranjit Singh https://orcid.org/0000-0002-7365-4123

References

1. Akbulut S. Accurate definition and management of idiopathic sclerosing encapsulating peritonitis. World J Gastroenterol 2015;21(2):675–687. DOI: 10.3748/wjg.v21.i2.675.
2. Hu D, Wang R, Xiong T, et al. Successful delivery after IVF-ET in an abdominal cocoon patient: Case report and literature review. Int J Clin Exp Pathol 2013;6(5):994–997. PMID: 23638238.
3. Wig JD, Goenka MK, Nagi B, et al. Abdominal cocoon in a male: Rare cause of intestinal obstruction. Trop Gastroenterol 1995;16(4):31–33. PMID: 8854953.
4. Solmaz A, Tokoçin M, Arıcı S, et al. Abdominal cocoon syndrome is a rare cause of mechanical intestinal obstructions: A report of two cases. Am J Case Rep 2015;16:77–80. DOI: 10.12659/AJCR.892658.
5. Xu P, Chen LH, Li YM. Idiopathic sclerosing encapsulating peritonitis (or abdominal cocoon): A report of 5 cases. World J Gastroenterol 2007;13(26):3649–3651. DOI: 10.3748/wjg.v13.i26.3649.
6. Foo KT, Ng KC, Rauff A, et al. Unusual small intestinal obstruction in adolescent girls: The abdominal cocoon. Br J Surg 1978;65(6):427–430. DOI: 10.1002/bjs.1800650617.
7. Al-Abassi AA, Emad M. Abdominal cocoon: An unusual cause of intestinal obstruction. Saudi Med J 2004;25:1482–1485. PMID: 15494828.
8. Herrero JC, Molina A, Lentisco C, et al. Sclerosing encapsulating peritonitis: A latent threat. Changes of posture in surgery treatment. Nefrologia 2007;27(6):729–736. PMID: 18336103.
9. Kaushik R, Punia RP, Mohan H, et al. Tuberculous abdominal cocoon–a report of 6 cases and review of the literature. World J Emerg Surg 2006;1:18. DOI: 10.1186/1749-7922-1-18.
10. Mohanty D, Jain BK, Agrawal J, et al. Abdominal cocoon: Clinical presentation, diagnosis, and management. J Gastro-intest Surg 2009;13(6):1160–1162. DOI: 10.1007/s11605-008-0595-7.
11. Machado NO. Sclerosing encapsulating peritonitis: Review. Sultan Qaboos Univ Med J 2016;16(2):e142–e51. DOI: 10.18295/squmj.2016.
12. Wei B, Wei HB, Guo WP, et al. Diagnosis and treatment of abdominal cocoon: A report of 24 cases. Am J Surg 2009;198(3):348–353. DOI: 10.1016/j.amjsurg.2008.07.054.
13. Gupta S, Shirahatti RG, Anand J. CT findings of an abdominal cocoon. AJR Am J Roentgenol 2004;183(6):1658–1660. DOI: 10.2214/ajr.183.6.01831658.