Journal of Rawalpindi Medical College (JRMC); 2018;22(2): 180-181

Case Report

Abdominal Cocoon - A Rare Presentation of Intestinal Obstruction

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Introduction

Sclerosing encapsulating peritonitis is rare and unusual presentation of small bowel obstruction.[1]In 1907, Owtschinnikow observed it and he named it as peritonitis chronic afibrosa incapsulata.[2,3,4,5]It is characterized by dense fibrocollagenous sheet that encases whole or a part of small intestine.[3]It is categorized into two main classes primary and secondary.[6]Causes of secondary form are peritoneal dialysis, pelvic inflammatory disease, disseminated tuberculosis and sarcoidosis.[6] Its idiopathic or primary form also known as idiopathic sclerosing encapsulating peritonitis or abdominal cocoon.[7]Its etiology is still unknown. It manifests itself in three inflammatory processes, i.e., recurrent acute, sub-acute, chronic.[8]On basis of routine investigation it is difficult to make diagnosis . Mostly it is diagnosed intraoperatively.[9,10]With advancement of imaging modalities like computed tomography,its diagnosis can be made.[11]But still surgery remains at top of it management strategy and it is mainstay of treatment[12].

Case Report

A fourteen years young girl presented to surgical emergency with complaints of abdominal pain, relative constipation and vomiting for last three days. She had no significant past medical and surgical history. Upon examination she was found to have distended gut loops palpable as a mass in the hypogastrium that had a gurgle on deep palpation. Baseline labs were unremarkable except abdominal X-ray which showed multiple air fluid levels. Her ultrasound showed mild to moderate fluid in abdomen, pelvis and between loops. Abdominal CT showed dilated, fluid filled small bowl loops with abrupt transition point at ileoceacal region, and moderate abdominopelvic ascites. No definite obstructing mass, lesion thickening was seen at ileoceacal junction. Findings were suggestive of small bowel obstruction with collapsed caecum and colon. Provisional diagnosis of intestinal obstruction was made. Diagnostic laparoscopy was performed which was converted into exploratory laparotomy. Per operative findings were dilated gut with internal herniation into posterior abdominal wall with dense adhesion encasing small bowel causing obstruction of ileum and in inflamed appendix. Adhesiolysis and appendectomy was performed as appendix was inflamed. As circulation of bowel was intact; therefore we did not resect any segment. Post operative course was unremarkable.

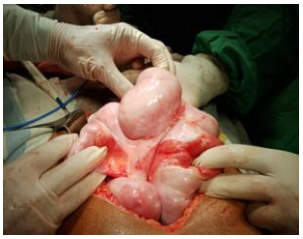

Fig.1. Dense membrane covering abdominal cavity

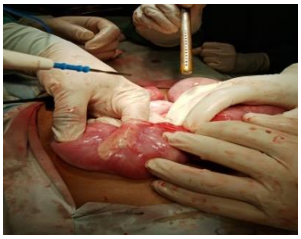

Fig. 2.Excision of membrane with diathermy

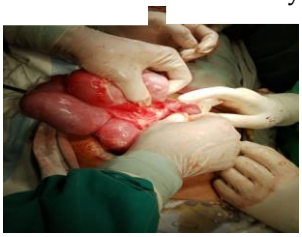

Fig.3. Inflamed appendix

Discussion

Sclerosing encapsulating peritonitis is an acquired inflammatory condition caused by various triggering factors. As mentioned above it has two types,primary form is idiopathic which also known as abdominal cocoon syndrome is. Despite of various researches, its etiology is still unknown. It is categorized into three main types on basis of extent of encasing membrane to intestine and various organs (Table 1) . In type 1 cocoon syndrome only a part of small intestine is covered by dense fibrocollagenous sheet. In type 2 intestine is covered completely. In type 3 whole intestine along with various organs like appendix, ascending colon,caecum and ovaries is covered (Table

1).[13] It has two forms, one is adolescent form and second one is adult form. It usually occurs in young girls living in tropical and sub-tropical areas like India, Pakistan China, Malaysia, Singapore, Saudi Arabia, South Africa, Nigeria, Kenya.[14-18]

Table 1. Abdominal cocoon -Types

Classification	Description
Type 1	Only part of small intestine is encased by dense membrane
Type 2	Whole of intestine is covered
Type 3	Entire intestine with visceral organ like ceacum, ascending colon and appendix are covered by membrane

Various hypothesis are made for its pathogenesis.One of hypothesis is retrograde menstruation associated with viral infection[19]. Another hypothesis says it occurs due to omental hypoplasia and vascular abnormalities during developmental process of fetus.[20,21]In Pakistan only two cases are reported till now.Secondary SEP is more common[22]. Secondary SEP is usually associated with continuous ambulatory peritoneal dialysis[23].But there are many causes of secondary SEP. It can be induced by drugs like beta blocker, proctalol and propranolol,can be induced by peritoneal dialysis, peritoneovenous shunt,ventricular peritoneal shunt, liver cirrhosis, peritoneal tuberculosis, sarcoidosis, familial mediterranean fever, systemic lupus erythematosis, gastrointestinal malignancy, intraperitoneal chemotherapy, foreign body, cytomegalovirus peritonitis, endometriosis, recurrent peritonitis, granulomatous peritonitis related with parasities.

In abdominal cocoon abdominal radiograph may show dilated gut loops or it may be nonspecific. CT scan abdomen may show encasement of intestine with membrane,peritoneal fluids and lymphadenopathy. Barium studies can be performed but it is not usually performed. Definitive diagnosis is made by laparoscopy or exploratory laparotomy.[24] In surgical options excision of membrane and adhesiolysis is done .But in some cases appendectomy can be performeddue to inflamed appendix. In some cases resection and anastamosis can be performed. There are rare complications of surgery like enterocutaneous fistula, adhesion formation.[7,25]

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