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Case Report

Case study on 23-year-old female with abdominal cocoon

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ABSTRACT

Abdominal cocoon which is also called as sclerosing encapsulating peritonitis is one of the rare cause of the gastro intestinal obstructions. It can cause complete encapsulation of the bowel by forming a thin layer around the bowel or partial encapsulation of the bowel in few cases. This condition is mostly seen in females than in males. We came across a rare case of abdominal cocoon in a 23 year old female patient presented with severe abdominal pain, vomiting's and constipation since 2-3 days. She has a history of LSCS 2 months ago and suffered with recurrent suture site infections since the surgery. She was on medications like pain killers, antibiotics, anti emetics and antispasmodics. After all the laboratory investigations she was diagnosed with abdominal cocoon and complete enterolysis of the bowel through laprotomy with jejunostomy (on POD-3) was performed. She was recovered after 1 week.

1. Introduction

Sclerosing encapsulating peritonitis (SEP)[1] is a rare and chronic inflammatory condition of the abdominal peritoneum with an unknown etiology which is also known as abdominal cocoon, the condition occurs when loops of the bowel are in cased inside the peritoneal cavity by a membrane, resulting in intestinal obstruction.[2]

1.1. Etiology/Pathophysiology

Because of the scarceness and unclear clinical manifestations, the final diagnosis can be frequently under diagnosed. It presents with recurrent episodes of bowel obstructions, stomach pain, nausea, vomiting's and can be idiopathic or secondary infectious condition. In a study, they have concluded that the patients undergoing peritoneal dialysis has incidence of 5 per 1000 persons. It involves progressive formation of dense collagenous sheaths of new fibrous tissue which constricts the small intestines and causes bowel obstructions. SEP has four distinct stages: a pre-sclerosing encapsulating peritonitis,[3] an inflammatory phase, a progressive phase, and a fibrotic phase.[4] The fibrotic phase is associated with formation of thick and fibrous tissue enclosing abdominal visceral organs and may cause shortness of breath. The exact causes of sclerosing encapsulating peritonitis[3] are unknown or idiopathic. It is mostly characterised by a greyish white fibrotic membrane encasing the small intestines partially or completely inside the thick membrane. In some severe conditions, it may involve other organs like liver, stomach and large intestine. Sometimes it could be a severe complication in people undergoing peritoneal dialysis.[5] Peritoneum is a membrane that covers the abdominal cavity enclosing organs like stomach, small and large intestines, liver and spleen. In a normal person, the peritoneum[6] is very thin and the bowel movements occur very smoothly and the food easily passes through the bowel. But in Sep[7] patient,

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the membrane becomes very thick due to inflammatory changes and causes constriction of the small bowel and causes intestinal obstructions and blocks in the bowel movements. It can result in symptoms like abdominal pain, nausea, vomiting's, weight loss and generalised weakness.[4]

1.2. Diagnosis

Radiographic studies help in additional assistance in arriving at the final diagnosis. CT imaging of the abdomen is the best of choice to make the diagnosis of SEP[7,8] Specifically, non-contrast-enhanced CT has been to better reveal membranous and peritoneal calcifications. The peritoneum is a thin, smooth, and barely perceptible with discontinuous enhancement on CT imaging. In SEP,[7] the peritoneum is very thickened, calcified, and with continuous enhancement. Radiological imaging plays a major role in diagnosing SEP.[7] Abdominal CT scan can revel level of peritoneal layer thickening and shows any other manifestations like calcifications. MRI scan is also a useful tool in diagnosing. X ray doesn't reveal much and just shows any peritoneal calcifications.[9]

1.3. Treatment

The gold standard treatment for sclerosing encapsulating peritonitis (SEP)[7] is partial or complete enterolysis (removal of adhesions to the bowel). Operative management is recommended in patients with small bowel obstructions[3] or if it is involving other organs too like large intestine, stomach. Medical therapy can help the patient only for some extent in reducing the symptoms like abdominal pain, nausea, vomiting's, abdominal cramps. Medical therapy includes antibiotics, anti-spasmodics, anti-pyrectic's.[8] laxatives, NSAID's, anti-emetics, anti fibrotics, aggressive nutritional support and anti-inflammatory drugs. The patients are also recommended to go on a liquid diet for few weeks for the purpose of easy digestion of food.

2. Case Presentation

2.1. History of present illness

A 23-year-old female patient presented in general ward with chief complaints of pain in abdomen, vomiting's and constipation in the last 2-3 days. She has undergone lower segment cessarian section (LSCS) 2 months back and she was prescribed with few antibiotics and dusting powder like betadine to prevent bacterial infections and to heal the wound. She complained about bleeding and severe pain at the site of sutures & she was on short course of painkillers antibiotics and recovered in 2 weeks after the cessarian section. Then she started experiencing fresh complaints like severe abdominal pain, vomiting's, generalised weakness, sleep disturbances due to abdominal pain after 2 months of LSCS. She went to a local hospital for general check up and treated with antibiotics, vitamin supplements, antiemetics and recovered in few days. From past 2-3 days again, she has been experiencing the same symptoms then she was referred to higher centres as she was not healing completely.

2.2. Social history

She is in a married monogamous relationship and has one child aged 8 weeks. And she is a housewife.

2.3. Allergies

No known food, medicine and environmental allergies.

2.4. Past medical history

She was on short course of antibiotics, vitamin supplements, anti-emetics, anti-spasmodic 2 months back.

2.5. Past surgical history

She has undergone LSCS (lower segment cessarian section) 2 months ago.

2.6. Medications

Currently no medications are used.

2.7. Physical examination

VITALS: Temperature- 98.6F, Blood pressure 110/60mmHg, Heart rate- 79/min, Respiratory rate- 23/min, Body mass index- 22.4, GCS- E4V5M6, GRBS- 91mg/dl, SPO2-98%@room air.

2.8. General examination

She has appeared pale with anxiousness and unable to talk due to fear and she is not willing to co-operate with the doctors.

2.9. Respiratory function

She has normal respiratory rate that is 23/min.

2.10. Cardiovascular

She has regular heart rate and rhythm with no murmurs, gallops and wheezing sounds.

2.11. Gastrointestinal

She has mild tenderness in the abdominal region.

Bowel and bladder are normal.

3. Initial Evaluation

3.1. Laboratory studies

Initially the work was done on the investigations in general department and revealed that she has low haemoglobin- 9.9grams that is a result of anaemia and has thrombocytopenia which is mild with the platelet count of 1.1lakhs/mm3. She has elevated monocytes which is a cause of infection and she has elevated c-reactive protein that is 84.1mg/lit. The serum electrolytes were normal and liver function test and renal function test were normal.

1. *CT scan of abdomen and pelvis:* conglomerate multiple small bowel loops (both jejunal and ileal loops) surrounded by thick enhancing sac like structures in centre of abdomen, minimal fluid collection between encapsulated bowel loop this is a sign of sclerosing encapsulating peritonitis that is also called as abdominal cocoon.
2. *Ultrasonography of abdomen and pelvis*: Mild free fluid filled within thin separations in the peritoneal cavity.
3. *Endoscopy:* Food residues in the stomach (gastroparesis), distal obstructions?

3.2. Differential diagnosis

1. Internal hernia
2. Pseudomyxoma peritonei
3. Peritoneal carcinomatosis
4. Peritoneal mesothelioma
5. Sclerosing malignant lymphoma
6. Malignant primary mesenteric tumours
7. Large bowel obstruction
8. Acute colonic pseudo-obstructions
9. Gastric outlet obstructions
10. Cyclical vomiting syndrome
11. Intestinal obstructions

3.3. Conformatory evaluation

CT scan of abdomen was done for the determination of diagnosis and revealed that bowel loops are distended there was fecalisation present in small bowel loops in the abdomen and were decompressed. The nodules of calcification along with the wall of the bowel was found. ECG was normal. Biopsy was done no abnormalities were found.

3.4. Diagnosis

Based on the laboratory findings a diagnosis of *Abdominal Cocoon* (*Sclerosing Encapsulating Peritonitis*) was made.

4. Management

Abdominal cocoon can sometimes be symptomatic or asymptomatic. The resolving of the disease can be based on the treatment and surgical procedures. Once the symptoms have been developed then the treatment should be started with antibiotics (cephalosporin antibiotics), antacids (proton pump inhibitors), pain-killers(tramadol50mg/day), antipyretics(acetaminophen), vitamin-supplements. These should be given initially. A surgery has to be performed that is laparotomy. Pre-operative care should be taken for the patient like vitals monitoring, ryles tube placement, nil by mouth, then the patient should be treated with antibiotics, antacids, NSAIDS, IV fluids should be administered, normal saline, ringer lactate solutions@ 75ml/hr, then laparotomy surgery should be performed. The surgery involves a large incision measuring 12 inches into the abdominal cavity so that the underlined organs can be clearly viewed. A catheter is inserted into the vein to deliver anaesthesia. A urinary catheter is placed in the bladder to drain urine. Unwanted adipose tissue was removed and the blood from the intestine was drained this blood was from the removal of unwanted adipose tissue. They have also checked for any other site of infectious manifestations in the small intestine. It also revealed a thick membrane that enveloped around the small bowel loops in the abdominal wall. The cocoon membrane was found and was incised. The lysis of cocoon and separation was done. Till now there is no intra-operative complications. After post-operation nil by mouth for further orders then the treatment was given with carbapenem (meropenem-1gm/BD), anti-microbials (metrogyl-500ml/TID), one pint of PRBC transfusion was done, painkillers (diclofenac-1amp/BID), Anti-pyrectics (acetaminophen- 100ml/bid). In post operation day-0 urine output-50ml/hr, drain was 500 ml, ryles tube aspiration was 250 ml, vitals are stable, on post operation day-1 NBM, vitals are stable, RT aspiration-150ml, post operative day-2 RT aspiration-100ml, urine output-60ml/hr. After post operative day-3 jejunostomy procedure was done and colostomy bag was placed through the skin at the front of abdomen and the wall of jejunum (a part of the small intestine) which collects faecal matter from digestive tract. RT aspiration was nil, drain w as 50ml, no liquid diet was allowed. On post operative day-4 vitals are stable, sips of water are allowed, drain was 25ml and urine output was 50ml/hr. on post operative day-5, RT removed, allowed liquids like water, juices and wastes collected in colostomy bag. On post operative day-6, allowed soft diet, vitals are stable and patient was about to discharge and advised review after one week. On review day colostomy bag was changed and patient was stable and advised review after one month. After one month the minor surgery was performed called STOMA Removal Surgery this involves attaching bowel together after the jejunostomy. After the surgery patient was stable and no pain in abdomen. After the surgery thrombofin

ointment was prescribed for the application at the suture site, this is the management provided for the patient.

4.1. Prognosis

Sclerosing encapsulating peritonitis is a rare condition and it is a bit difficult in completely diagnosing the disease. The patients may present with various types of symptoms which makes it tough in identifying the exact cause of the disease. Radiological imaging is the best tool for accurate diagnosis. So far there are no accurate biomarkers or any specific markers for diagnosing sclerosing encapsulating peritonitis. Laboratory investigations like complete blood picture, CRP levels, ESR levels, renal function test, liver function test, serum electrolytes are also used as tools for diagnosis purpose only during acute conditions.

5. Enhancing Healthcare Team Outcomes

Basically, this study tells about the professionals who worked in the proper diagnosis making like how the professionals and health care workers work as a team. This teamwork leads to proper decision making for clear and proper diagnosis. The responsibility has to be taken by every health care staff for achieving the clear and proper diagnosis. The staff who are generally involved in this process are physicians, nurses, duty medical officers, clinical pharmacists and lab technicians. These all have prominent role.in making of proper diagnosis the alterations have to be made and these all to be discussed by the staff. If there is not communication between the team then it leads to improper diagnosis then leads to improper treatment. This can lead to chronic situations. Communication can be a prominent role in making proper and clear diagnosis.

6. Discussion

Sclerosing encapsulating peritonitis (SEP) is a rare and chronic inflammatory condition of the abdominal peritoneum with an unknown etiology which is also known as abdominal cocoon, the condition occurs when loops of the bowel are in cased inside the peritoneal cavity by a membrane, resulting in intestinal obstruction.

7. Conclusion

Abdominal cocoon is a rare case and it is most common in females. Etiology of this case report was secondary infections and it is mostly treated symptomatically and surgically depends upon the condition of the patient.

8. Source of Funding

None.

9. Conflict of Interest

None.

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