

Peritoneum 2 - Dr. Lu'ay

Meconium peritonitis:

Meconium is a sterile mixture of epithelial cells, mucin, salt, fats and bile. It is formed by the third month of intra-uterine life, the upper third of intestine become filled with meconium, by the fourth month, the accumulation has reached the ileocecal valve. During the remainder of intrauterine life, the colon becomes increasingly filled.

Meconium peritonitis is an aseptic peritonitis which develops late in intrauterine life or during or just after delivery.

Meconium enters peritoneal cavity through an intestinal perforation and in over 50% of cases the perforation is the result of intestinal obstruction.

Meconium remains sterile until about 3 hours after birth, thereafter unless the perforation has become sealed, sterile meconium peritonitis gives place to acute bacterial peritonitis which unless treated promptly is rapidly fatal.

Treatment:

It is bad prognostic condition. The greatest chance of survival is in the patients who have intestinal perforation but no intestinal obstruction in which closure of perforation and draining the peritoneal cavity is enough.

Pneumococcal peritonitis:

It affects undernourished girl between 3 or 6 years old which usually occur through vagina or fallopian tube. For males it is usually secondary to upper respiratory tract infection or middle ear infection.

Treatment: Early operation is required.

Tuberculous peritonitis

I) Acute tuberculous peritonitis:

It can simulate acute bacterial peritonitis but the fluid aspirated is straw-colored and tubercles seen scattered over the peritoneum and greater omentum.

Such patient need evacuation of fluid and taking some part for lab investigation + part of greater omentum for histopathology and abdomen should be closed without drain.

II) Chronic tuberculosis peritonitis:

Origin of infection:

1. Tuberculous mesenteric lymph node.
2. Tuberculosis of ileocecal region.
3. A tuberculous pyosalpinx.
4. Blood born infection from pulmonary tuberculosis.

There are **four** varieties of tuberculous peritonitis:

1 – Ascitic form:

The peritoneum is studded with tubercles, and the peritoneal cavity becomes filled with pale straw colored fluid.

Usually patient presented with enlarged abdomen, no pain, with all signs of ascites regarding shifting dullness, transmitted thrill, everted. On palpation there a transverse solid mass can be detected which is the rolled up greater omentum infiltrated with tubercles.

Diagnosis:

Ascitic fluid aspiration which is pale, clear, rich in lymphocytes. Rarely M. tuberculosis can be found but its presence can be demonstrated by culture.

Treatment: By anti TB regimen.

2 – Encysted (loculated) form:

It is similar to ascitic form but it affects one part or portion of peritoneal cavity forming a cyst.

It can make a difficulty in diagnosis

Its treatment is the same.

3 – Fibrous (plastic) form:

Characterized by production of widespread adhesion which causes coils of intestine especially ileum to be matted together and distended. These distended loops will act like blind loops and will cause steatorrhea, wasting, and attacks of abdominal pain.

Treatment:

Releasing of adhesion but if it is fibrous adhesion excision of affected part of intestine should be done. Also chemotherapy indicated after surgery.

4 – Purulent form:

Usually it is secondary to tuberculous salpingitis. Cold abscess will result which will try to open to outside through umbilicus or to inside to bowel.

Treatment: Surgical drainage and also chemotherapy after that.

Neoplasms of peritoneum

Carcinoma peritonei is a common terminal event in many cases of the stomach, colon, ovary or other abdominal organs and also the breast and bronchus. The peritoneum, both parietal and visceral, is studded with secondary growths and the peritoneal cavity becomes filled with clear, straw – colored or blood stained ascitic fluid.

The main forms of peritoneal metastases are:

1. Discrete nodules.
2. Plaques varying in size and color.
3. Diffuse adhesions, this form occurs at a late stage of the disease and gives rise sometimes to frozen abdomen.

Gravity will determine the distribution of free malignant cells within the peritoneal cavity. Implantation occurs also on the greater omentum, the appendices epiploicae and the inferior surface of diaphragm.

Differential diagnosis:

1. *Tuberculous peritonitis*: early discrete nodules common in tuberculous peritonitis are greyish and translucent and closely resemble the discrete nodules of peritoneal carcinoma but the later feel hard.
2. *Fat necrosis*: Usually can be distinguished from carcinomatous nodules by its opacity.
3. *Peritoneal hydatid*: Can simulate malignant disease after rupture of a hydatid cyst with seeding of daughter cysts.

Treatment:

Ascitis due to carcinomatosis of the peritoneum may respond to systemic chemotherapy. In other cases intraperitoneal chemotherapy with cisplatin, mitomycin C or methotrexate after drainage of ascitis may be effective.

Pseudomyxoma peritonei

This rare condition occurs more frequently in females. The abdomen is filled with a yellow jelly large quantities of which are often more or less encysted. The condition is associated with both mucinous cystic tumors of the ovary and appendix. Recent studies suggest that most cases arise from a primary appendicular tumor with secondary implantation on to one or both ovaries. It is often painless and there is frequently no impairment of general health for a long time.

The abdomen will be distended with what seems to be fluid that cannot be made to shift should raise the possibility.

Diagnosis can be made by ultrasound, CT – scan or by operation.

At operation masses of jelly are scooped out. The appendix of present should be removed together with any ovarian mass.

Unfortunately recurrence is usual. It is locally malignant but does not give rise to extraperitoneal metastases.

Acute nonspecific ileocecal mesenteric adenitis

Etiology:

Nonspecific mesenteric adenitis was so named to distinguish it from specific (tuberculous) mesenteric adenitis. Despite many investigations the etiology often remains unknown although some cases are associated with Yersinia infection of the ileum. In other cases an unidentified virus is blamed. In about 25% of cases a respiratory adenitis.

Clinical features:

It is common during childhood and unusual after puberty. The typical history is short attacks of central abdominal pain lasting from 10 to 30 min, vomiting is common but no alteration in bowel habit.

Examination:

There is spasm of general abdominal colic usually referred to the umbilicus with intervals of complete freedom, mild fever; abdominal tenderness is greater along the line of mesentery. Shifting tenderness is positive to differentiate it from AA

Tuberculosis of the mesenteric lymph nodes:

It is less common than acute nonspecific lymphadenitis. Tubercle bacilli usually but not necessarily bovine are ingested and enter the mesenteric lymph nodes by ways of Peyer's patches.

Presentations:

1. Demonstrated radiologically: The shadows cast by one or more calcified tuberculous lymph nodes are seen in a plain radiograph of the abdomen. Often the shadow cast by such a lymph node or nodes is situated in the ileocecal region but nearly as many are displayed along the line of attachment of the mesentery.
2. As a cause of generalized symptoms: The patient usually a child under 10 years of age, losses appetite, looks pale and there is some loss of weight and sometimes with evening pyrexia.
3. As a cause of abdominal pain: Sometimes abdominal pain is the cause of the patient being brought for advice. Usually this pain is central, not severe but rather a discomfort and is often constant. On examination the abdomen is somewhat protuberant but there is tenderness on deep pressure to the right of umbilicus.
4. Symptoms indistinguishable from those of appendicitis: On occasions the abdominal pain is acute and may be accompanied by vomiting. This combined with tenderness and some rigidity in the right iliac fossa, makes the diagnosis from appendicitis almost impossible. A radiograph may show calcified lymph nodes.
5. As a case of intestinal obstruction: Tuberculous mesenteric adenitis can be the cause of intestinal obstruction. For instance, a coil of small intestine becomes adherent to a caseating node, and is thereby angulated, or a free coil may become imprisoned in the tunnel beneath the site of adherence and the mesentery.
6. As a cause of pseudomesenteric cyst : when tuberculous mesenteric lymph nodes break down, the tuberculus pus may remain confined between the leaves of the mesentry and a cystic swelling having the characteristics of a mesenteric cyst is found.
7. As ileocecal lymph nodes: At laparotomy hard, enlarged lymph nodes may be found limited to the ileocecal mesentery as a result of previous tuberculous infection.

Treatment: Like other tuberculous infections.

Mesenteric cysts

Are classified as:

1. Chylolymphatic
2. Enterogenous
3. Urogenital remnant
4. Dermoid (teratomatous) cyst

Chylolymphatic cyst:

It is the commonest variety of mesenteric cysts. It arises in congenitally misplaced lymphatic tissue that has no efferent communication with the lymphatic system. It arises most frequently in the mesentery of ileum. The thin wall of the cyst which is composed of connective tissue lined by flat endothelium is filled with clear lymph or less frequently with chyle. A chylolymphatic cyst has a blood supply independent of that of the adjacent intestine; thereby enucleation is possible without the necessity of resection of gut.

Enterogenous cyst:

It is derived either from a diverticulum of the mesenteric border of the intestine, which has become sequestered from the intestinal canal during embryonic life, or from a duplication of the intestine. An enterogenous cyst has a thicker wall than a chylolymphatic cyst and it is lined by mucous membrane. The muscles in the wall of an enterogenous cyst and the bowel with which it is in contact have a common blood supply; consequently removal of the cyst always entails resection of the related portion of the intestine.

Clinical features of a mesenteric cyst:

It is encountered most frequently in the second decade of life, less often between the age of 1 and 10 years. Patient can be presented as:

1. Painless abdominal swelling: mesenteric cyst has a characteristic features which are:
 - a. There is a fluctuant swelling near the umbilicus.
 - b. The swelling moves freely in a plane at a right angle to the attachment of the mesentery.
 - c. There is a zone of resonance around and classically a belt of resonance across the cyst.
2. Recurrent attacks of abdominal pain with or without vomiting which is due to recurrent temporary impaction of a food bolus in a segment of bowel narrowed by the cyst. Or possibly from torsion of the mesentery.
3. An acute abdominal catastrophe due to :
 - a. Torsion of that portion of the mesentery containing the cyst.
 - b. Rupture of the cyst, often due to a comparatively trivial accident.
 - c. Hemorrhage into the cyst.
 - d. Infection.

Radiography:

Ba – follow through will show the viscera displaced around the cyst and not infrequently some portion of the lumen of the intestine will be narrowed.

Treatment:

Chylolymphatic cysts can be enucleated in toto.

Enterogenous cyst can be treated by resecting the cyst and the attached part of the intestine. Sometimes it is difficult to remove all the cyst due to dangerous area of attachment to bowel, in such conditions some part of the cyst can be left after destroying its lining by diathermy.

Neoplasms of the mesentery

Mesenteric tumors are classified as:

1. Benign:
 - a. Lipoma
 - b. Fibroma
 - c. Fibromyxoma
2. Malignant:
 - a. Lymphoma
 - b. Secondary carcinoma

Tumors situated in the mesentery give rise to physical signs similar to those of a mesenteric cyst, the sole exception being that they sometimes feel solid.

Treatment:

A benign tumor of the mesentery is excised in the same way as an enterogenous mesenteric cyst. This means with resection of the adjacent intestine. When possible, a malignant tumor of the mesentery is subjected to the same treatment. In inoperable cases radiotherapy can be employed.