Available online at www.elixirpublishers.com (Elixir International Journal)

Physiology and Anatomy

Elixir Physiology and Anatomy 179 (2023) 56925 - 56927

ISSN: 2229-712X

Encapsulating Peritonitis - A Rare and Serious Complication of Peritoneal tuberculosis: Clinical case and Review of the literature.

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ARTICLE INFO

Article history:

Received: 1 April 2023;

Received in revised form:

15 June 2023;

Accepted: 25 June 2023;

Keywords

Peritonitis,

Encapsulating,

Tuberculosis.

ABSTRACT

Encapsulating peritonitis (EP) is defined as diffuse peritoneal fibrosis which can progress to true sclerosis, sheathing the intestinal loops and forming the cocoon, its diagnosis is often intraoperatively during laparoscopies or laparotomies. It is a rare complication with an unfavorable prognosis. Its clinical presentation can range from an asymptomatic patient to an occlusion. It is often secondary to peritoneal dialysis, intraperitoneal chemotherapy or tuberculous peritoneal inflammation syndrome. Imaging makes it possible to approach the diagnosis, but surgical exploration provides diagnostic certainty and allows a therapeutic procedure, histological examination shows a deposit offibrin.Medicaltreatmentisoftendisappointing,andsurgery which consists of enterolysis is indicated in complete bowel obstructions, repetitive subocclusions and urgent situations (perforations, necrosis, hemorrhages). In the absence of treatment, the outcome is fatal in the majority of cases. Despite current progress in the therapeutic management of encapsulating peritonitis, the prognosis remains relatively poor. We report this exceptional case of encapsulating peritonitis to educate the medical team about its rare occurrence, which will be of paramount importance, due to diagnostic difficulties and in order to improve the prognosis.

Introduction

Encapsulating peritonitis is a diffuse peritoneal fibrosis, which may constitute a sclerosis enveloping the intestinal coves and forming the cocoon, leading to recurrent obstructions of the digestive tract. [1,2]. Several names have been given to it: abdominal cocoon, encapsulating peritonitis, fibrosing peritonitis, sclerosing peritonitis, plasticperitonitis, sub acute or chronic peritonitis, encapsulating sclerosing peritonitis.[3,22]. Long-term peritoneal dialysis, intra peritoneal chemotherapy and peritoneal infections, especially tuberculosis, are the most involved etiologies, many cases remain idiopathic. [4,5]. The lack of specificity of clinical signs and radiological examinations delays the diagnosis, which justifies surgical exploration in order to obtain diagnostic certainty. [6].Treatment consists of treatment of the underlying disease or elimination of possible incriminating agents (peritoneal dialysis, drugs, infections) and nutritional support, often with total parenteral nutrition. Surgery is required if conservative treatment fails. This disease, whose pathophysiology is poorly understood, is responsible for a considerable mortality.

We report an original observation of an encapsulating peritonitis complicating a peritoneal tuberculosis, collected in the department of surgical visceral emergencies CHU MOHAMED VI OUJDA, the preoperative diagnosis was difficult due to a non- specific imaging. Laparotomy allowed the diagnosis to be made and a curative procedure to be performed.

Observation

53-year-old patient, hospitalized on 09/15/2020 for worsening chronic abdominal pain with altered general condition.

He had a history of peritoneal tuberculosis, treated for 06 months with ant bacillary drugs, with cessation of treatment 02 months ago before his admission, and an exploratory laparotomy on 12/08/2020, which had objectified the presence of peritoneal adhesions, without mass, abiopsy was made in favor of a fibrous adipose tissue reworked with exudative inflammatory lesions, no tuberculosis or signs of malignancy.

His history goes back to 03 months by the installation of diffuse and recurrent abdominal pains, the evolution was marked by the aggravation of the abdominal pains since 3 days before his admission, and the brutal installation of a stop of thematters and gases without vomiting, the whole evolved in a context of not quantified fever and deterioration of the general state.

General examination found a conscious, afebrile patient, normocolored conjunctiva with: BP 13/08 mm Hg, HR 78 beats/min, FR 20 cycles/min, Temperature at 38, 4°C.Abdomen distended, with impaction of the left iliac fossa

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and diffuse abdominal tenderness. Rectal examination was painless with an empty blister. Biological workup showed hyper leukocytosis at 19000/mm3 with predominance of neutrophils, CRP at 120 mg/dl, albumin at 19mg/dl. The blood ionogram and the hepatic assessment were without abnormality. A chest X-ray was normal. An unprepared abdomen showed hydroaerobic levels in both the colon and small intestine.

An injected Abdomino-pelvic CT scan showed significant distension of the gall bladder coves at 68mm. These coves appeared to be located between the D2 portion of the

duodenum and the head of the pancreas, with a spherical herniated distribution in the subhepatic region, with a stretched aspect of the mesentery and the superior mesenteric artery, as well as a localized parietal pneumatosis at the level of some of the smallest coves, and a small peritoneal effusion at the level of the parietal-colonic gutters and the cul de sac of Douglas (Figure 1)An exploratory laparotomy was decided in emergency, after conditioning the patient.

Legends of the Figures

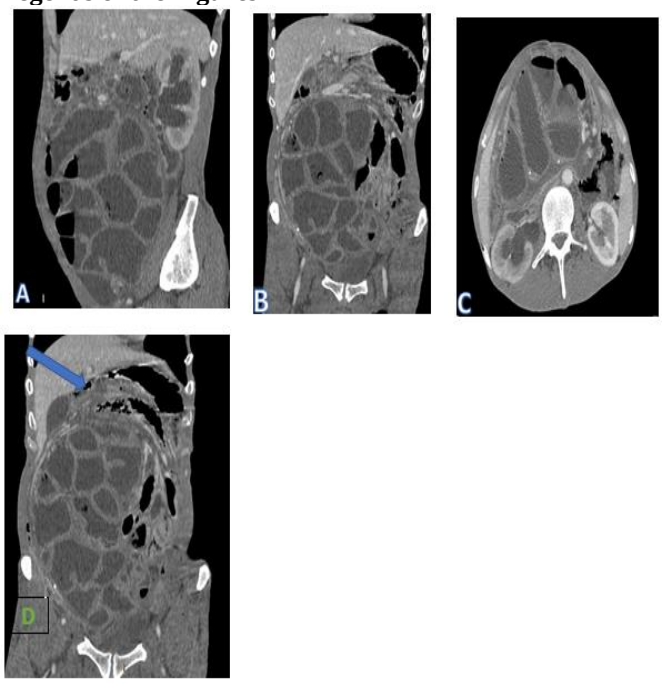

Figure1.A,B,C):AbdominalCTimageswithdistended,water -aerated,sac-enclosed bowels; D) Right paraduodenal hernia

Discussion

According to some authors encapsulating peritonitis (EP) was first described in 1927 by Josa [7], according to others, the first description was made in 1980 by Gandhi et al [6]. EP is a diffuse peritoneal fibrosis, which constitutes a sclerosis

envelopingtheintestinalansaeformingthecocoon,demonstrated bylaparotomyor laparoscopy. It is a rare and poorly understood anatomoclinical entity [8]. All ages are affected by the disease and pediatric cases have been described [09,10].

Multiple etiologies have been reported in the literature, the most frequent of which are infectious causes (peritoneal tuberculosis), peritoneal dialysis [11,12] and drug causes: practolol, a beta-blocker often incriminated, and other beta-blockers [7,11]. Other rarer causes have been reported, including asbestosis [13], peritoneo-jugular and ventriculo peritoneal shunts [13], liver transplantation [14], autoimmune causes and perforation of hollow organs [15]. Tumor etiology is rare [16]. The idiopathic form occurs in young adolescents in tropical and subtropical areas. In our observation, the etiology of peritoneal tuberculosis was retained given the patient's history.

The positive diagnosis of EP is mainly made intra operatively[7,16,18],whichwas the case for our patient after exploratory laparotomy. The differential diagnosis is mainly with retractile mesenteritis, congenital peritoneal sclerosis, peritoneal carcinosis, retroperitoneal fibrosis and finally, abdominal tumors [19].

The results of biology are not specific, radiological examinations especially CT scan can make the diagnosis suspicious, which allows an adequate management of patients, even if the radiological signs are not specific. The CT differential diagnosis of EPS is mainly with internal para-duodenal hernias [20,21], moreover our patient had a right para-duodenal hernia and peritoneal sclerosis.

Surgery, which consists of peritonectomy and enterolysis, is time consuming and has a high risk of complications. Thus, the therapeutic attitude towards EPS depends on its etiology, if any, as well as on the nature of the complications [2]. Indeed, our patient underwent a laparotomy on the same day of his admission, the exploration found several pelo-penetrating, pelo-celic, pelo-colic flanges with significant distension. The procedure consisted of an adesiolysis with liberation of the small intestines, a retrograde emptying to check the passage in the small intestine, and a peritoneal and parietal biopsy. In spite of the surgery, antibiotic therapy and resuscitation measures, our patient died at D3 postoperatively in a picture of septic shock, which proves the poor prognosis of this pathology, hence the importance of sensitizing the medical team to think about the diagnosis, thus a rapid management.

Conclusion

Encapsulating peritonitis is a rare but devastating disease associated with considerable morbidity and mortality. Its pathophysiology is poorly elucidated, but still a subject of current interest. The clinical signs are not specific, and radiology allows to approach the diagnosis. Surgery guarantees diagnostic certainty, as well as a therapeutic procedure, but the results are not always satisfactory.

Conflicts of interest

The authors have declared no conflicts of interest

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