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Peritoneal Hydatidosis

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Abstract

A widespread parasitic illness, hydatidosis is a serious public health concern, especially in endemic nations like Morocco. Analyzing the prognostic, therapeutic, paraclinical, evolutionary, and clinical aspects of widespread peritoneal hydatidosis with numerous localizations is the aim of this work. All problems that arise from Echinococcus granulosus larvae essentially secondary populating the peritoneal serosa are collectively referred to as peritoneal hydatidosis. The polymorphic symptomatology of peritoneal hydatidosis is one of its defining characteristics. Epidemiological, clinical, biochemical, and imaging findings are combined to make the diagnosis.

Materials and Methods: *We present a case of peritoneal hydatidosis in its specific form that occurred in the visceral surgery emergency service P35 of the Ibn Rochd Hospital during the year 2017.*

Results: *The purpose of the patient's admission was to treat diffuse peritoneal hydatidosis. A clinical examination found many hepatomegaly-related abdominal tumors. The biological evaluation revealed a highly positive hydatid serology. Computed tomography was used to establish the preoperative diagnosis of peritoneal hydatidosis. It revealed sub-mesocolic peritoneal hydatidosis and type 3 hydatid cysts in segments VI, VII, II, and III of the left liver. Resection of the hydatid cysts and projecting domes along with drainage was the course of treatment. Following a straightforward surgical procedure, the patient was released on day six, receiving adjuvant treatment consisting of albendazole for a duration of three months. In our current work, we emphasized the diagnostic challenges presented by this atypical placement of the hydatid cyst, as well as the significant role that CT plays in delivering a positive and extremely exact topographic diagnosis, based on this observation and the literature. In addition, we discussed the critical role that surgery plays in the therapy of this illness and the growing significance of medical care, especially in preventing recurrences.*

One uncommon but dangerous side effect of hydatid illness is peritoneal hydatidosis. A positive diagnosis is dependent on clinical, paraclinical, and epidemiological data, the most prominent of which is computed tomography. The prognosis is determined by optimal surgical care of peritoneal hydatidosis and early detection and treatment of the main locations.

Keywords: Hydatidosis, exceptional hydatid cyst, Echinococcus granulosus, treatment, prognosis.

Introduction :

A parasite disease known as peritoneal hydatidosis (PHT) is caused by Echinococcus granulosus larvae populating the peritoneal serosa. It frequently happens as a result of hepatic hydatid cyst rupture or confirmation. 5–16% of all hydatid cyst localizations are caused by this uncommon parasite illness [1]. The main foundations for diagnosis are biological and, more crucially, radiological. Techniques for logical exploration are crucial [2]. Surgery is still the major form of treatment. To stop recurrence, antiparasitic medication is recommended [3,4]. The probability of recurrence is the key indicator of the progression, with a typically positive prognosis [5].

We report a case of peritoneal hydatidosis treated at the visceral surgery department 35 of the Ibn Rochd Hospital in Casablanca. The patient presented with a specific type of abdominopelvic hydatid cysts with multiple localizations: peritoneal, hepatic, and pelvic.

Patient and Observation:

A 64-year-old patient was admitted to the P35 visceral emergency department. The patient was an abstinent alcoholic and a habitual smoker. In 2009 and 2013, he had two surgeries to remove a hydatid cyst from his liver. The sickness began three months ago with the start of right and left hypochondria pain, which was described as a heaviness without jaundice or vomiting. This pain developed in the setting of apyrexia and a general decline in health.

Upon entrance, the patient's assessment showed that their breathing and hemodynamic conditions were stable and that they were conscious. A midline laparotomy scar, a bloated abdomen, pain in the left and right hypochondria, and hepatomegaly were all observed during the abdominal examination. Additionally, a mass measuring 5 cm in its longest axis was seen at the umbilical level, fixed in the deep plane and movable in the superficial plane. Another mass was found in the right iliac fossa and flank, fixed in the deep plane and measuring 10 cm in its longest axis. The rectal examination revealed nothing unusual.

A biological workup revealed that the patient's Hb was 9.6 g/dL, WBC was 10,800 cells/mm³, and platelets were 255,000 cells/mm³. The serology for hydatids was positive. The results of the thoraco-abdominal-pelvic CT scan showed: a left liver with multivesicular exophytic cystic formations with thin walls that were around 27 by 20 cm and caused a mass effect on the spleen, left kidney, and digestive systems; Two simple cysts in the hepatic dome, the largest measuring 5 x 4 cm; two simple cystic formations in segment III, the largest measuring 4 x 3 cm; a multivesicular cystic formation in the right hypochondrium measuring 4.5 x 3.7 cm; two other formations with the same characteristics in segment VII, measuring about 9 x 5 cm, and in segment II, measuring 3 cm; a multiloculated cyst-

ic formation in the right iliac fossa measuring 7.5 x 4 cm; another multivesicular cystic formation in the right flank, approximately 14 x 8 cm; two intraperitoneal cystic formations in the supraumbilical region, the largest measuring 4.3 x 4 cm; and an oblong, thin-walled formation lateral to the right bladder, measuring 9 x 6 cm, which exerts a mass effect and compresses the right iliac ureter, causing moderate upstream hydronephrosis.

A surgical procedure was planned, and the urology team implanted a urinary catheter in the patient. Several hydatid cysts were discovered during visceral exploration in the larger omentum, segment 6 (type 3, with vesicular content), and the left liver, measuring 25 cm. Furthermore, a 4 cm hydatid cyst in segment 7 (type 3, with vesicular content) with a fistula likewise blinded at V3/0, two infracentimetric blind biliary fistulas at V3/0, and a hydatid cyst straddling segments 2 and 3 were emptied, showing brood capsules. A 15 cm long hydatid cyst that reached the retroperitoneum was discovered in the right flank. In the suprapubic area, there was an additional 6 cm hydatid cyst with vesicular substance. The patient had a 6 cm hydatid cyst removed from the greater omentum, a suprapubic hydatid cyst removed, the protruding dome of a hydatid cyst in the left liver (segments 6, 7, and straddling segments 2 and 3) removed, and a partial hydatid cyst in the Douglas pouch removed. Drainage was carried out with two Salem tubes for the residual cavity of the Douglas pouch, four Salem tubes for the residual cavities in segments 6 and 7 of the left liver, and retroperitoneal drainage of the right flank.

The postoperative period went without incident. After the urethral catheter and drains were removed, the patient was released from the hospital six days after the procedure. The 15-day follow-up included a thorough clinical assessment, primary wound care, dressing changes every two days, and prescriptions for antibiotics, anticoagulants, and analgesics for the whole duration of the follow-up. It was also advised to refrain from lifting anything heavy until full recovery had occurred.

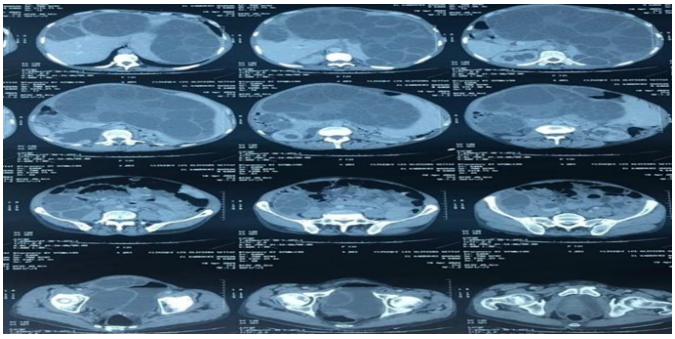

Figure 1: Various Locations of Hydatid Cysts : Hepatic, Inter-rectal, Douglas pouch

Figure 2: Distended Abdomen Before the Surgical Procedure

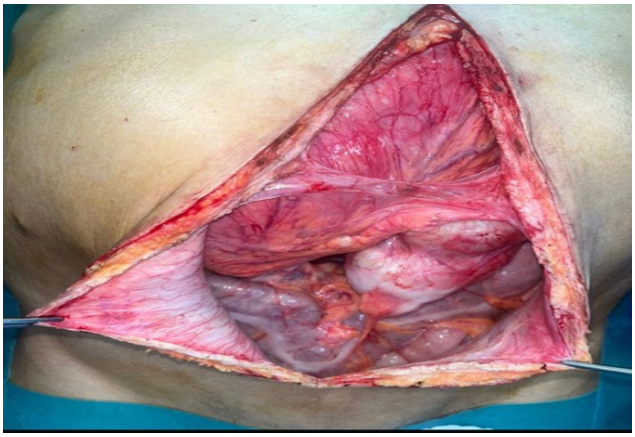

Figure 3: Abdomen After Midline Incision During Surgery Showing Hydatid Cysts

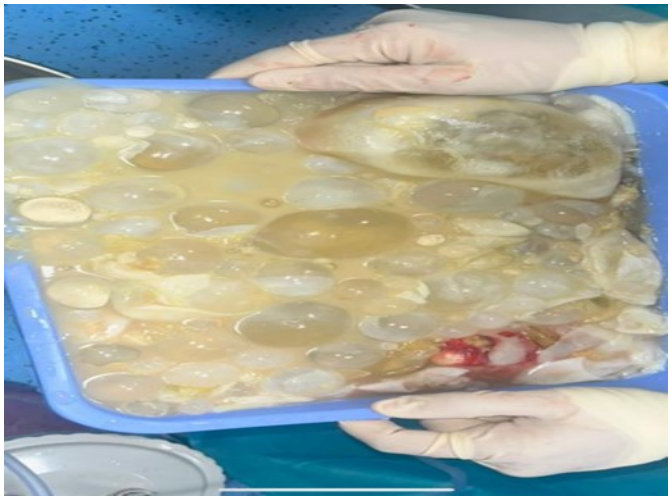

Figure 4: Extraction of Multiple Hydatid Cysts During Surgery

Discussion:

One uncommon but dangerous side effect of hydatid illness is peritoneal hydatidosis [1-3]. By European series, it makes up 5–16% of all combined places [4].

According to published research, young people are often the age group where hydatidosis is most prevalent [7, 8]. As in our case, 66–85% of instances of peritoneal echinococcosis are secondary to the rupture or spillage of a hepatic hydatid cyst, whereas 10–20% of cases have a splenic origin [1, 5].

An unusual case is primary peritoneal hydatidosis. In 78% of instances, the initial cyst ruptures spontaneously [6], which is made possible by the cyst's huge size, thin wall, high pressure, and superficial placement. Most typically, traumatic rupture is caused by an iatrogenic event that happens during a diagnostic procedure like cholangiography or liver biopsy. It may also be a side effect of a car accident or an abdominal injury.

The stages that follow rupture include the peritoneal response to hydatid aggression, which can show up as hydatid ascites in unilocular cysts, free hydatids in multivesicular cysts, or hydatid peritonitis in cases where the cyst's contents are infected.

Without treatment, these early forms can progress in two ways: either into a pseudo-tuberculous form with an accumulation of multiple punctiform cysts resembling the miliary granulations of tuberculous peritonitis, or towards subserous grafting with the development of peritoneal cysts, which is by far the most common form and can present as either generalized with more than 100 cysts or localized in one region of the abdomen.

The contagious substance is still debatable. FERRAND and BARSOTTI [7] believe that this seeding is caused by the projection of daughter vesicles and scolex, but BENEX [8] believes that the germinal membrane alone is the cause of peritoneal infestation.

An encysting membrane that separates the ruptured cystic substance from the surrounding peritoneal cavity is a characteristic of encysted collections.

During an emergency laparotomy, an acute intra-abdominal rupture is frequently detected [6]. Nonetheless, there should be concern if an acute abdominal image is linked to allergic symptoms (urticaria, shock, etc.), especially in trauma instances. The variety of cyst sites explains the diverse symptomatology of the classical, late, and insidious types [13]. The majority of functional indications, which indicate extremely advanced forms, are pain and compression indicators (jaundice, portal hypertension, urine and rectal signs, etc.). For a while, the patient's overall health can be maintained.

Diagnosing peritoneal hydatidosis requires the use of medical imaging. Nowadays, there are many ef-

ficient imaging techniques available, and the resulting images are frequently highly suggestive. They make it possible to diagnose hydatid cysts positively, locate them, contribute to treatment plans, and guarantee the follow-up of patients who have received treatment. In most cases documented in the literature, ultrasound is regarded the first-line examination for the diagnosis and identification of hydatid disease in its abdominal sites, with reliability above 90%. Regarding peritoneal hydatidosis, ultrasound has been shown to help identify primary peritoneal hydatid sites, whether they are single or numerous, and to show a primary hydatid cyst in cases of secondary peritoneal hydatidosis [9]. Other benefits of ultrasound include its ability to investigate the link between the hydatid cyst and the inferior vena cava, hepatic veins, portal bifurcation, and upper urinary tracts, as well as to look for potential compression.

Computed tomography (CT) has completely changed the topographic management of lesions, therapy, and diagnosis of abdominal hydatidosis [10]. Since its introduction, it has developed into a crucial supplementary assessment that is required whenever surgery is being contemplated. In addition to identifying the illness, CT gives the surgeon a very helpful map of the lesions. When it comes to peritoneal hydatid cysts in particular, abdominal CT (with or without iodine injection) makes for a considerably simpler and more accurate diagnosis than ultrasound [8, 10, 12]. CT is very helpful to the surgeon since it not only shows the disease but also maps out its various sites.

With the use of magnetic resonance imaging (MRI), it is now simple to diagnose rupture and track the progression of a hydatid cyst while receiving medical care [11–15]. Other cystic or pseudo-cystic masses of the peritoneum, such as TB, gelatinous disease, cysts, and cystic lymphangiomas, can be considered as differential diagnoses. Thus, hydatid serology is quite significant. Nonetheless, it is an effective method of post-treatment observation.

Surgery is still the major treatment for peritoneal hydatidosis [14,16]. Treating primary hydatid cysts and peritoneal cysts at the same time is the aim [10]. Since it is challenging to guarantee the total removal of hydatid cysts, it is linked to medical treatment, both preoperatively to sterilize the cysts and particularly postoperatively to prevent recurrences, which are rather common in peritoneal hydatidosis [17, 18]. Treatment for acute forms entails treating visceral infections and draining peritoneal effusions (hydatid sand, daughter vesicles, bile, blood). The procedure is finished with a thorough cleansing of the peritoneum.

Depending on the pattern of the lesions and the degree of spread, the peritoneal stage in late forms may need many procedures. Respecting certain guidelines is necessary, though: the pelvis must always be released first to prevent potentially fatal pelvic compression; the length of each surgical stage should be adjusted to the patient's resistance, beginning with the removal of the largest cysts or those that compress the intestine; and the first surgical stage should always involve the evacuation of the primary hydatid cysts. It is ideal to receive a full recovery in a single procedure [17, 18]. Excision (cystectomy, pericystectomy) of cysts that are easily and safely removed is advised. Partial cystectomy (resection of the projecting dome) with parasite evacuation is recommended for deep cysts in touch with arteries, mesentery, and viscera [12]. When circumstances dictate, we suggest a

"puncture-aspiration-sterilization" method for the cysts in patients who have had numerous procedures and have thick adhesions that make dissection difficult and hemorrhagic. Heavy operations with a high risk of death and morbidity, like severe hepatotomies or hepatectomies, are not warranted in this benign condition. It is reasonable that the surgeon cannot effectively assist the patient in disseminated forms, such as pseudo-tuberculous hydatidosis with thousands of pinhead-sized cysts [17, 18].

The degree of peritoneal spread, the existence and severity of visceral sites, the overall health of the patient, the number of surgeries performed, the degree of cure, and the experience of the surgeon all affect the prognosis of the disease.

The main goal of long-term follow-up is to find recurrences that need to be operated on again. Patients who have had surgery for peritoneal hydatidosis need to be closely watched from the time of the procedure until several years later, as it is challenging to ensure the complete and thorough eradication of lesions [19]. The main controls used in this surveillance are clinical, which is frequently done later than imaging; serological, which necessitates combining the results of multiple tests because of the low sensitivity and specificity of these tests; and medical imaging, which primarily consists of ultrasound with a significant contribution from CT.

Conclusion:

One uncommon but dangerous side effect of hydatid illness is peritoneal hydatidosis. Based mostly on computed tomography (CT) data, the positive diagnosis is supported by clinical, paraclinical, and epidemiological data. The cornerstone of treatment for peritoneal hydatidosis is surgery, which can be used conservatively or aggressively to treat primary visceral hydatid cysts in addition to peritoneal hydatidosis. Getting medical attention is important for controlling this illness. By offering a framework for intervention, it acts as a therapeutic substitute for patients who are not able to receive treatment and for multivisceral hydatidosis. The goal is to avoid organ failure and recurrences.

To identify any recurrence, long-term postoperative monitoring is required, with a primary focus on serology, CT, and ultrasonography. The prognosis is determined by surgically managing peritoneal hydatidosis and by early detection and treatment of main locations.

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