CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 37 (2017) 154–156

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Abdominal wall Hydatid cyst: A review a literature with a case report

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ARTICLE INFO

Article history:
Received 22 February 2017
Received in revised form 12 June 2017
Accepted 12 June 2017
Available online 23 June 2017

Keywords:
Hydatid cyst
Mass
Abdominal wall
Operation
Albendazole

ABSTRACT

INTRODUCTION: Hydatid cyst (HC) disease is a serious health problem in endemic areas. It is a parasitic infection that commonly involves liver and lungs while muscular HC is rare. HC of abdominal wall was reported only six times. We reported a 39-year-old male presented with HC of the right loin who was managed surgically with brief literature review.

CONCLUSION: HC should be put in the differential diagnosis of the abdominal wall masses. Its pre-operative diagnosis is important to prevent rupture with subsequent anaphylaxis and recurrence. Surgery is the main modality of treatment.

1. Introduction

HC disease is a serious health problem in endemic areas [1]. It is a parasitic infection that commonly involves liver and lungs [2]. Hydatid cyst caused by the larval stage of a parasite, Echinococcus granulosus [1]. Dog is the primary host while the intermediate hosts are sheep, horse, cattle and occasionally human being [3]. Although liver and lungs are the most involved organs, hydatid cyst can occur in all viscera and soft tissues with variable degree of signs and symptoms [1,4]. Primary skeletal muscle hydatid disease without liver and lung involvement is rare even in endemic areas. Muscular hydatosis has been documented in literature but involvement of abdominal wall is a rare condition with around six cases reported up to date [2]. In line with SCARE guide line, we reported a case of abdominal wall HC [5].

Patient Information: A 39-your-old man, manual worker, presented with right side, slow growing, abdominal mass with negative past medical and surgical history. No family history was reported.

Clinical Findings: On examination; there was (10 cm × 10 cm) smooth surface, firm, not tender mass on the right lumber region, normal overlying skin, fixed to the underlying muscles (Fig. 1).

Diagnostic Assessment: All Laboratory investigations were normal apart from white blood cell count (WBC) which was slightly elevated (WBC; 12000). Computed tomography (CT) scan of abdomen revealed large multiloculated, multicystic mass lesion of the right side of abdominal wall and surrounding lower costal cartilage with enhanced septa, a picture of Hydatid cyst (Fig. 2).

Therapeutic Intervention: The patient was treated medically for 2 years (Albendazole 400 milligrams twice a day, 3 days a week) without response and the mass continue to enlarge slowly. The decision of surgery has been taken, the patient prepared for operation. Under general anaesthesia, on left lateral position, the mass excised by transverse elliptical incision and the defect reconstructed by double layers of non absorbable polypropylene mesh with suction drain left in the field. Grossly, the lesion was HC with a lot of daughter cysts and invading all the abdominal wall layers apart from the skin and subcutaneous fat with intra-abdominal omental adhesion (Fig. 3). The mass sent for histopathology examination for documentation.

Follow-up and Outcomes: The post-operative time was uneventful. The patient was discharged home in 2nd day post-operative day.

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http://dx.doi.org/10.1016/j.ijscr.2017.06.022

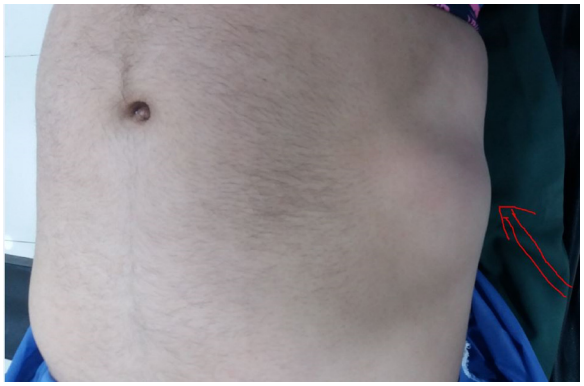


Fig. 1. Swelling of the right loin (arrow).

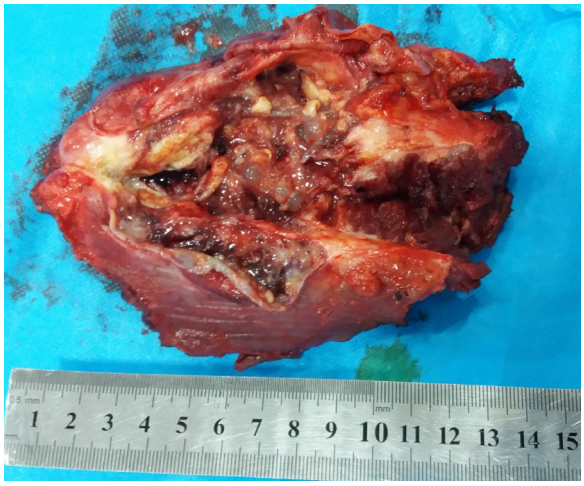
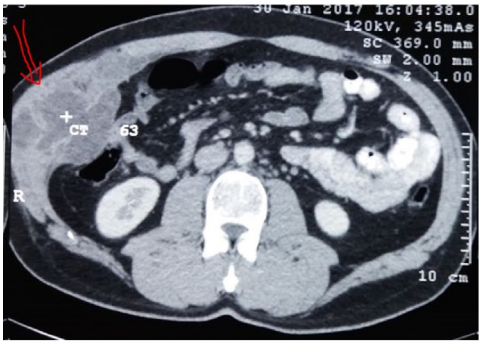


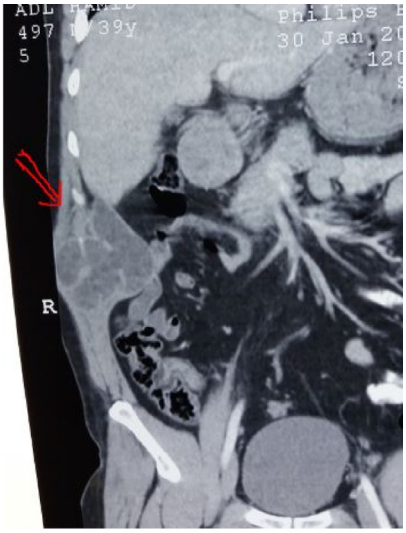
Fig. 3. The specimen showing multiple septa and daughter cysts.

2. Discussion

HC of skeletal muscle is a rare condition accounting for 1–4% of all HC disease [2]. Low prevalence of this type of HC disease may be explained by the physical barriers to the hematogenous spread of the cysts which are present in hepatic sinusoids and pulmonary capillaries. In spite of this, mechanical factors, like muscular contraction and chemical factors such as high lactic acid concentration in skeletal muscles may make encystment of the parasite in these tissues less likely [6]. Nevertheless, some cases of HC disease at various muscles have been reported in literature, such as, sartorius [7] biceps brachii [8] diaphragm [9] thoracic wall [10] gluteus [11], supraspinatus [12], pterygoideus [13], and soleus muscles [14]. Primary HC of abdominal wall musculature is a very rare disease, up to date; only 6 cases have been reported. Table 1 shows the literature review of the reported cases of abdominal wall HC [2,3,15–18]. Several pathways have been suggested to explain extra-hepatic-extra-pulmonary HC. Nearly 5–15% of the parasite escape from the capillaries of the liver and lung entering systemic circulation to implant at various sites. Other methods of dissemination are veno venous shunts in liver, spread from gut to systemic circulation through lymphatics bypassing portal filter [2]. Suggested pathways for localization of HC in the abdominal wall musculature (especially right side) are: 1- Direct parasite entry into inferior vena



(A)



(B)

Fig. 2. Computed tomography (CT) scan of the abdomen showing septated mass in the anterior abdominal wall (arrows). (A) coronal section. (B) sagital section.

Table 1
Shows the reported cases of abdominal wall Hydatid cyst.

Reference	Authors/year of report	Age (year)/sex	Site	Type of Hydatid cyst	management
[2]	Abhishek et al/2012	60/Female	Right paraumbilicus	Simple cyst	operation
[3]	Srivastava et al/2008	14/Male	Right lower quadrant	Simple cyst	conservative
[14]	Gulmez et al/2015	60/Female	Left paraumbilicus	Simple cyst	operation
[15]	Ousadden et al/2011	70/Female	Right paraumbilicus	Not mentioned	operation
[16]	Tarahomi et al/2016	57/Female	umbilicus	Not mentioned	operation
[17]	Ozoilo et al/2007	27/Female	right lower quadrant	Not mentioned	operation
–	Current report	39/Male	Right loin	Infected	operation

cava through connection between portal and systemic veins and reflux implantation of the parasites by Valsalva maneuver which may occur with daily activity. 2- Penetration of the parasites into peritoneal space from intestine and subsequent invasion of the abdominal wall. 3- Penetration of the parasite into abdominal lymphatic followed by localization into abdominal wall musculature [2]. The signs and symptoms of HC are nonspecific, and depend on the exact localization and size of the cyst. It usually presents as a painless, slowly growing, non-inflammatory mass [15]. However, the current reported case presented with a painless mass but converted to painful one lately and the overlying skin was totally normal. The differential diagnoses of a mass involving the abdominal wall are abscess, sebaceous cyst, sarcoma, liposarcoma and lipoma [15]. The exact pre-operative diagnosis of a HC is critical because of the risks of anaphylaxis or daughter cyst showering with subsequent recurrence. US, CT and MRI are very useful radiologic imaging for the diagnosis, determination of the type, size, and localization of the cyst [19]. Management of muscular HC disease is total excision of the cyst with surrounding tissues [2]. Conservative management of HC is much debatable. There are authors reported that albendazole when used alone for about 6–8 weeks, cured HC in about 50% of cases [3,20,21]. Srivastava et al. reported a 10 × 15 centimetres HC in a right lower quadrant of 14 year old male who was reluctant for surgery. The patient was on (Albendazole 50 mg/kg/day). Fourteen weeks later, the boy was completely cured [3]. Our case received conservative therapy for about two years because he refused surgery.

In conclusion, HC could occur anywhere in the body and it should be put in the differential diagnosis of abdominal wall masses. Its pre-operative diagnosis is important to prevent rupture with subsequent anaphylaxis and recurrence. Surgery is the main modality of treatment.

Conflicts of interest

There is no conflict to be declared.

Funding

No source to be stated.

Ethical approval

Approval has been taken from bioscience center.

Consent

Consent has been taken.

Author contribution

Abdulwahid M. Salih: Surgeon performed the operation and follow up.

Fahmi H. Kakamad: writing the manuscript and follow up.

Zuhair D. Hammood, Bzhwen Yasin and Dilshad M. Ahmed: drafting and follow up.

Guarantor

Fahmi Hussein kakamad.

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