Case report: South African female with pelvic hydatid disease

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Hydatid disease is a zoonosis that is caused by parasites that belong to the Echinococcus species of the Taeniidae family of cestodes. Echinococcus cysts are caused by dog tapeworms and it is found in many low income areas. We present a case of a South African woman with extensive hydatid disease of the pelvis.

Keywords:
bone hydatid disease, hydatid disease, pelvic hydatid disease

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Introduction

Case presentation

A 49-year-old female, of African descent, was referred to our Orthopaedic Department with a draining sinus over her L hip for the last 5 months. She was complaining of pain and difficulty in walking. She is noted to be obese with a BMI of 31 and is HIV negative. Her past medical history included a laparotomy in 2019 and she was found to have extensive hydatid disease in her abdomen and then told to take an antibiotic for a year. She had no known allergies and is currently unemployed. On examination, it was noted that she mobilizes using a walking stick and cannot walk long distances due to severe pain. She is generally wheelchair-bound. Her abdomen was noted to have a large 10-cm scar over the L-inguinal area, and over her left-buttock area, there was a 0.5-cm wound that is draining a yellowish-brown fluid. The general surgeons took the patient to the theater for a relook of the abdomen and found that there were a number of cysts that were coming from the L-iliac wing bone as well as abdomen (Figs 1–3). The patient had refused any further surgical intervention and was not keen on trying new and alternative treatment options.

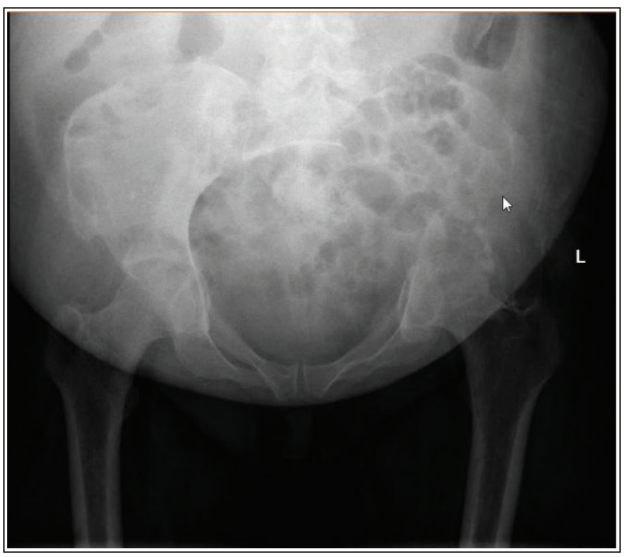
A radiograph was done as seen below

Computed tomography images done were

Computed tomography images show that the entire left hemipelvis contains a large cystic mass.

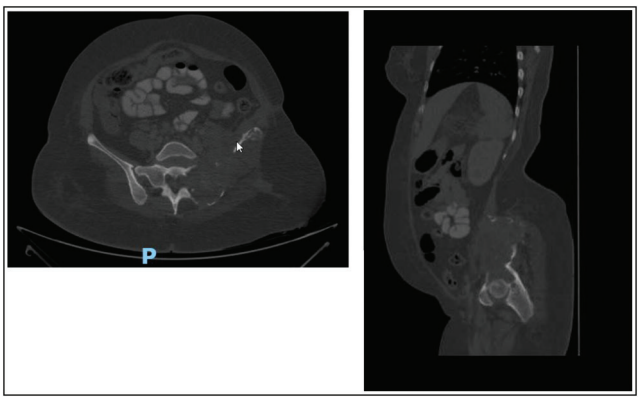
Hydatid disease is a zoonosis that is caused by parasites that belong to the *Echinococcus* species of the Taeniidae family of cestodes. Echinococcus cysts are caused by dog tapeworms and it is found in many low-income areas and found on all continents, except Antarctica [1]. The life cycle involves two hosts, animals are the definitive hosts, while humans are accidental intermediate hosts, it is commonly found in the liver and lung, and in

Figure 1



X- ray pelvis showing number of cysts that were coming from the L-iliac wing bone

Figure 2



CT pelvis axial, sagital views

Figure 3

Whole CT coronal cut

rare cases, it is found in bone, spleen, and breast [2]. Three types of echinococcosis occur in humans: cystic echinococcosis caused by *Echinococcus granulosis*, alveolar echinococcosis caused by *Echinococcus multilocularis*, and polycystic echinococcosis caused by either *Echinococcus vogeli* or oligarthrus; *E. granulosis* and *E. multilocularis* occur most commonly in humans [1].

The definitive hosts are dogs, foxes, and other carnivores. These tapeworms live in the small bowel of these animals and infected ova are shed in feces. Humans ingest the contaminated meat and thus become intermediate hosts as the larvae enter the human portal circulation. Sometimes, larvae reach the lungs and other areas of the body. The life cycle is completed when the definitive hosts consume infested viscera of the intermediate host (humans) [3]. Cystic echinococcosis is responsible for 95% of all hydatid cyst cases in humans [4].

The known treatment options include an antihelminthic such as Albendazole and Praziqauntel [5]. In some cases, surgical debridement is necessary when extensive disease is found. A number of case studies have been reported across the world with many citing difficulties in treating patients with pelvic hydatid disease.

A case study from China successfully used gamma-radiation together with surgery to treat a patient. They concluded that treatment could work in patients with severe abdominal disease and can prevent recurrence of disease [6].

The problem arises when patients have resistant disease or recurrence of disease, what are the treatment options then, and what are the treatment options when bone disease is present?

A case study in which sternal hydatid disease was treated with radiation therapy concluded that while it did work in their case study, it did provide an alternative treatment option in what is already a difficult area to treat [5]. In 2017, a case report of pelvic hydatid disease was successfully treated together with surgical debridement and antihelminthic therapy [3]. Another case report from Karachi used a limb-salvage procedure in which a hemipelvectomy together with resection of the proximal femur was done; together with postoperative antihelminthics, the patient at the 5-year follow-up was reported to finally be without disease and walking without assistance [7]. In 2009, another case report of a patient in Italy with pelvic disease was offered a total hip replacement but had two revision surgeries and is now reported to be pain free and the prosthesis is correctly positioned and stable [8]. Only one study has been done in South Africa looking at hydatid disease: this study showed that 50% of its 22 patients were found to have an HIV co-infection [9]. This is an interesting finding and is something that should be investigated in the future since Southern Africa has the highest incidence of HIV in the world [10].

Bone hydatid-disease incidence is low and remains difficult to treat, especially if the disease is present in difficult-to-access surgical areas. More data are needed to explore this disease specifically in South Africa as we have no data regarding our incidence of bone hydatid disease. We are looking for any ideas on treatment options we could offer this patient as this disease causing her significant morbidity.

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

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Conflicts of interest
No conflicts of interest or financial assistance was used in the publication of this study.

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