

Isolated Gastrocnemius Hydatid Cysts: A Case Report

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Abstract

Introduction: Hydatid cysts generally involve the liver and the lungs. Exclusive involvement of muscle is extremely uncommon, especially calf muscles. We report a case of hydatid cyst in gastrocnemius muscle.

Case report: A 38 year old female presented with painless right calf mass of one year. Radiological tests showed a cystic lesion suggestive of hydatid cyst in the calf with no liver or lung involvement. Surgical excision of two gastrocnemius cysts was done and the patient was started on Albendazole. The patient had an uneventful recovery. Final histopathological report confirmed the diagnosis of hydatid cyst.

Conclusions: Hydatid cyst should be included in the differential diagnosis of any soft tissue mass, especially in endemic areas.

Keywords: Isolated Gastrocnemius, Hydatid Cyst.

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Introduction

Hydatid cyst in humans is usually caused by the larval stage of *Echinococcus granulosus*.⁽¹⁾ These cysts, which generally involve the liver and the lungs, are uncommonly found in muscles; even in endemic zones. Exclusive involvement of the muscles is extremely uncommon, because implantation at this site would require passage through the filters of the liver and lung.⁽²⁾ In addition, the presence of lactic acid in the muscle creates an unfavorable milieu for growth.⁽³⁾

Primary intramuscular hydatidosis has rarely been described in the literature, and in all of the previously published articles, the disease has been reported to be around the hip, in the thigh, or in the upper extremities.⁽⁴⁾ Here we report a case in which a female patient was found to have hydatid cyst in the calf muscles.

Case report:

A 38-year-old woman with an unremarkable medical history presented to the outpatient general surgery clinic with painless swelling in her right calf for one year (Figure 1) which was gradually increasing in size. On

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examination, a non-tender lump on the middle third of the right posterior crural region, it is 7 cm in diameter, hemispherical in shape with a smooth surface, soft but does not fluctuate, non pulsatile, non compressible and non reducible, The skin moves over it and appears

to be fixed to the deep tissues as it becomes less distinct on contraction of the underlying muscle ,the overlying skin is normal and regional lymph nodes are not enlarged .X-ray showed an oval shape lesion in the soft tissue of the right calf (Figure 2).



Figure (1): *Gastrocnemius hydatid cyst. arrows point to the lump in the posterior crural region.*

Ultrasonography revealed 6 by 3 cm well defined mixed echogenicity mass lesion .MRI demonstrated 3 by 2.5 cm cystic lesion containing multiple internal daughter cysts and 3.5 by 3.5 cm soft tissue lesion noted lateral to the previous one containing at least 3 cysts but shows diffuse enhancement, hydatid cyst had to be considered for the first lesion and infected hydatid cyst for the second lesion was also considered (Figure 3).

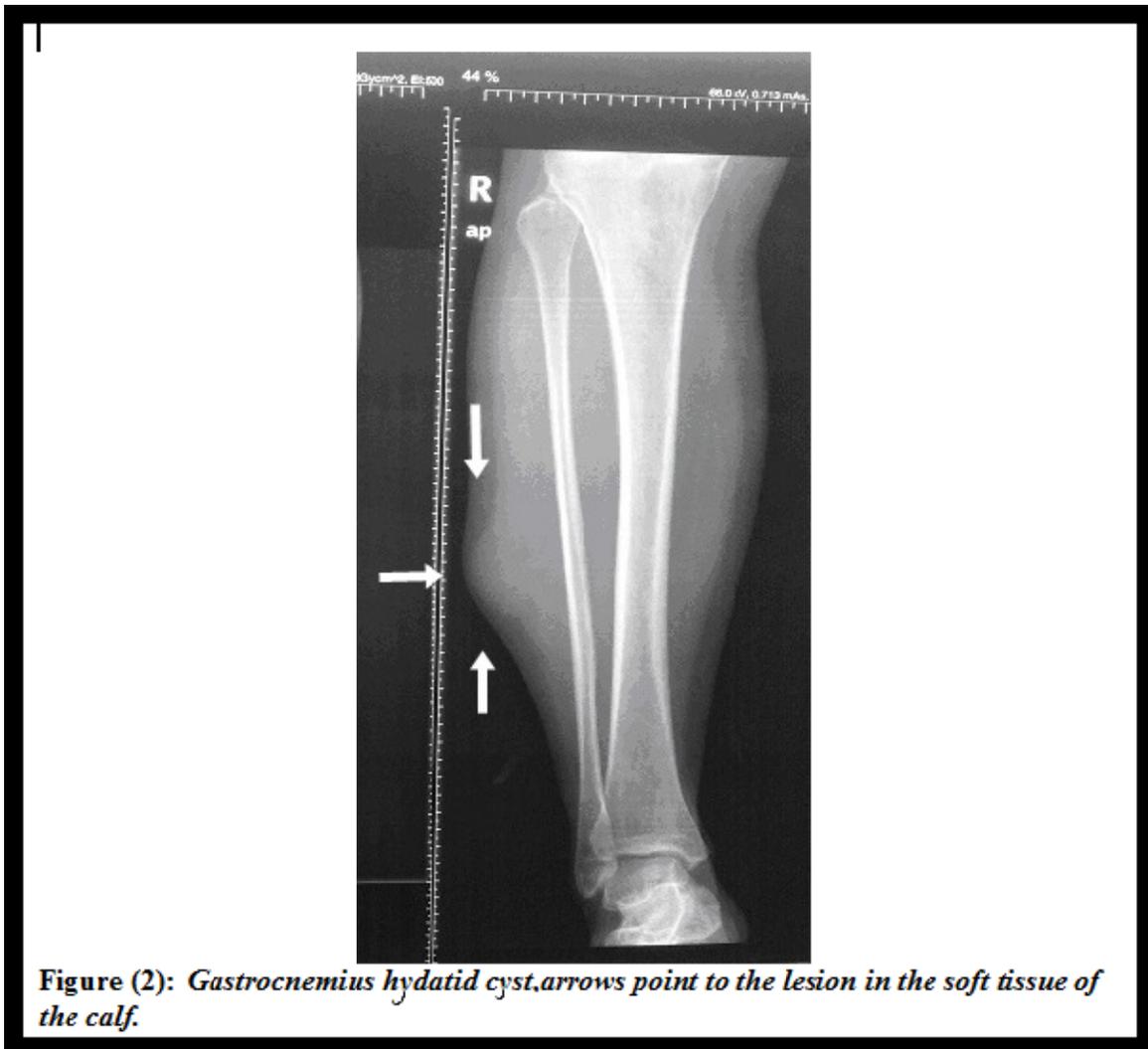
CXR showed no consolidation or cystic lesion, liver ultrasonography was normal.as intramuscular hydatidosis was suspected fine

needle aspiration was avoided for fear of spillage and anaphylactic reactions. Enzyme-linked Immunosorbent Assay for detection of anti-*Echinococcus* antibodies was negative. After preoperative work-up, patient was planned for operation and complete excision of two cysts within the right gastrocnemius muscle was performed. The postoperative course was uneventful, and the patient was discharged on the second postoperative day after being started on Albendazole. Final histopathological report was consistent with hydatid cyst. The patient was doing well at one month follow up.

Discussion:

Cystic hydatid disease is a parasitic infection caused by *E. granulosus*, characterized by cyst formation in different organs and tissues. It is a zoonosis and is

transmitted from domestic and wild members of the canine family via parasite eggs to a variety of wild and domestic animal.⁽⁵⁾ Humans are the intermediate host and the disease is endemic in the Mediterranean area, New Zealand, Australia, and South America.⁽⁶⁾



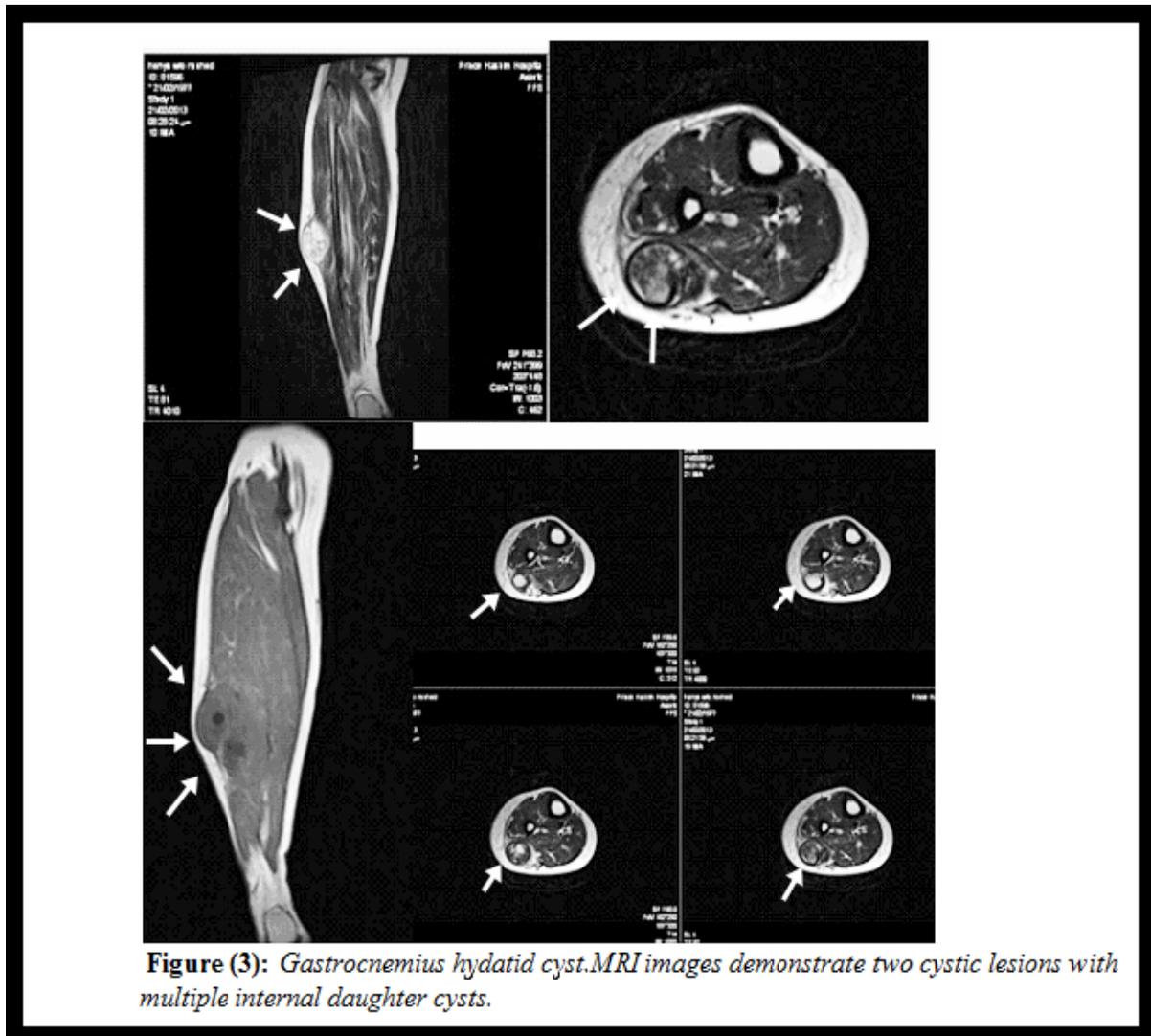
The hydatid cysts *tend* to form in the liver (50% to 70% of patients) or lung (20% to 30%) but may through the capillary systems reaches the general circulation and passes to all viscera and soft tissues. For this reason, hydatid cysts may arise in atypical sites such as the brain, heart, orbit, urinary bladder, chest

wall, subcutaneous tissue, tibia, parotid gland, breast, cervicofacial region, thyroid, and in any organ of the body.⁽⁷⁾

Primary involvement of muscle is very rare and has been reported in approximately 3% of all patients with hydatidosis.⁽⁸⁾ It has been

hypothesized that the presence of lactic acid in the muscles does not allow the larvae to grow into cysts. Nevertheless, some cases of primary muscular hydatidosis at various sites have been reported, i.e. thoracic wall, sartorius, biceps brachii, supraspinatus,

gluteus, pterygoideus and soleus muscles, whereas, only few cases of primary subcutaneous hydatidosis of the inferior limbs have been reported.⁽⁹⁾ Search on gastrocnemius muscle involvement, as in our patient, yielded only one case report prior to our case.



Echinococcosis is diagnosed essentially by the patient's history, physical examination findings, radiologic imaging modalities, aspiration and serological tests. Radiologic imaging modalities generally include ultrasound, computerized tomography (CT)

and MRI [6]. Serological tests are indirect hemagglutination, latex agglutination, ELISA and immunoelectrophoresis.⁽¹⁰⁾ In regions where hydatidosis is endemic, hydatid cysts should be included in the differential diagnosis of any unusual soft-tissue swelling.^(11, 12)

The appropriate treatment of hydatid cyst is determined by several factors and is surgical or percutaneous drainage with intracystically injected scolical agents and chemotherapy.⁽¹³⁾ In muscular hydatid disease, the treatment of choice is excision of the intact cyst and surrounding tissue. Medical treatment with antihelminthic drugs, such as mebendazole and albendazole, should be included especially for disseminated, inaccessible hydatidosis and for patients who do not favor the morbidity of an operative process. These drugs may also

play an important role in conjunction with surgery, both preoperatively for sterilization of the cyst and postoperatively in case of spillage.^(14, 15)

Conclusion

Hydatid cyst should be included in the differential diagnosis of any soft tissue mass at any anatomical site. This holds true especially in areas where the disease is endemic. Treatment is mainly surgical excision with scolical agents used as indicated.

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أكياس عدارية منفردة في عضلات ريلة الساق: تقرير حالة

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الملخص

تشمل عادة الإصابة بالكيسات العدارية الكبد والرئتين. الإصابة المنفردة للعضلات غير شائعة للغاية، وخاصة عضلات ريلة الساق. قمنا بتوثيق إصابة منفردة لعضلات ريلة الساق اليمنى بالكيسات العدارية.

تقرير الحالة: حضرت مريضة تبلغ 38 عاماً وهي تعاني من تورم غير مؤلم في ريلة الساق اليمنى منذ سنة تقريباً. أظهرت الفحوصات الشعاعية آفة كيسية توحى بوجود كيسة عدارية في ريلة الساق مع عدم وجود إصابة مرافقة للكبد أو الرئة. تم استئصال كيسيّتين عداريتين من عضلات ريلة الساق، بدأ المريض بتناول علاج البندازول، كان طور النقاهة خالياً من أي مضاعفات تذكر، تقرير الأنسجة المرضية النهائي أكد الإصابة بالكيسات العدارية.

النتائج: ينبغي أن تدرج الكيسة العدارية في التشخيص التفريقي لأي كتلة في الأنسجة الرخوة، وخاصة في المناطق الموبوءة.

الكلمات الدالة: الشوكاء الحبيبية، الكيسة العدارية، عضلات الريلة.