Case Report

# Hydatid Cyst of the Subcutaneous Tissue Without Other Involvement: MR Imaging Features

Xavier Chevalier,[1] Alain Rhamouni,[2] Stéphane Bretagne,[3] Jean Martigny,[1] and Bruno Larget-Piet[1]

Hydatid cyst caused by *Echinococcus granulosus* is often manifested by a slowly growing cystic mass, most often involving the liver and the lungs (78%) [1]. The 22% of cases that do not involve the liver or lung affect muscle, peritoneum, bone, spleen, pancreas, heart, kidney, or brain instead [1, 2]. We describe a patient who had a chronic hydatid cyst in the subcutaneous fat and in whom the diagnosis was greatly facilitated by MR imaging.

## Case Report

A 40-year-old man, originally from Portugal and living in France for 20 years, was hospitalized with a slow-growing, slightly tender mass of the posterior aspect of the left thigh. He had returned to Portugal once a year since emigrating. Sonography revealed a 15-cm hypoechoic mass in the subcutaneous tissue adjacent to the muscles. Contrast-enhanced CT scans showed a mass with well-circumscribed fluid density and peripheral enhancement, compatible with the diagnosis of an abscess. This subcutaneous mass was multilocular and hypointense with rim enhancement on contrast-enhanced T1-weighted MR images and was hyperintense on T2-weighted MR images (Fig. 1). The surrounding muscles were compressed but were otherwise normal. Immunologic tests for *E. granulosus* and *Echinococcus multilocularis* (immunofluorescence and immunodiffusion tests) were both negative. Aspiration of the mass produced a brown fluid with numerous polymorphonuclear cells. No pathogen grew on various culture media.

The mass was surgically excised, and histologic examination showed a PAS-positive membrane and granulomatous material but no germinal epithelium or protoscolex. By using a polymerase chain reaction on the DNA extracted from the cyst fluid, we assessed the origin of the *E. granulosus* [3]. The patient was then given 400 mg of albendazole daily for 2 months [4].

## Discussion

Soft-tissue hydatid cysts occur in 2.3% of cases reported from endemic areas; they are usually associated with involvement of other structures [5]. To our knowledge, isolated subcutaneous hydatid cyst has not been previously reported [1, 2]. Sonography and CT are useful for delineating the location of the cyst, but the findings are nonspecific [6]. Serologic tests usually allow hydatid cysts to be distinguished from nonparasitic cysts and abscesses [7]. However, in our patient, immunologic tests and aspiration of the mass did not establish the diagnosis. Immunologic tests may be negative for chronic hydatid cyst, as in our case, or they may be negative because the strain infecting the patient is different from the strain from North Africa used for testing [6]. Therefore, the diagnosis of a tuberculous or amebic abscess cannot be excluded. In our patient, the liver and the lungs were not involved, and the cyst was not calcified. MR imaging showed a multilocular mass with a regular rim, suggesting the diagnosis of hydatid cyst [8].

The association of a hypointense peripheral rim with multicystic mass (cyst inside a cyst) is a distinctive feature of hydatid cyst [8]. MR imaging cannot be used to determine the viability of a hydatid cyst [8]. However, in our case, the presence of daughter cysts and the absence of capsular cal-

Received January 24, 1994; accepted after revision March 15, 1994.
[1]Département de Rhumatologie, Hôpital Henri-Mondor, Bd. du Général De Lattre De Tassigny, 94010, Créteil, Cedex, France. Address correspondence to X. Chevalier.
[2]Département de Radiologie, Hôpital Henri-Mondor, 94010, Créteil, France.
[3]Laboratoire de Parasitologie, Hôpital Henri-Mondor, 94010, Créteil, France.

*AJR* 1994;163:645–646 0361–803X/94/1633–0645 

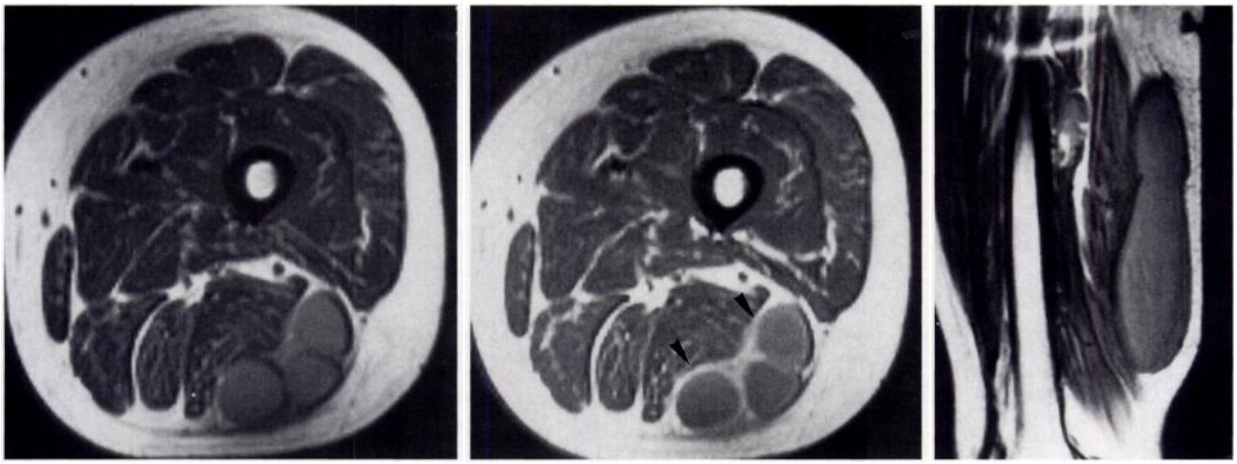


**Fig. 1.—40-year-old man with slow-growing, slightly tender mass of posterior aspect of left thigh.**
***A*, Axial T1-weighted (400–800/20) spin-echo MR image shows hypointense and multilocular mass.**
***B*, Axial T1-weighted spin-echo MR image after injection of contrast material shows peripheral enhancement (*arrowheads*).**
***C*, Sagittal T1-weighted spin-echo MR image shows extent of mass in subcutaneous fat.**

cification, detachment of the membrane, and irregular edges suggest a viable cyst [8].

ACKNOWLEDGMENT

We thank M. C. Voisin of the Laboratoire d'Anatomopathologie.

REFERENCES

1. Amir-Jahed AK, Fardin R, Farzad A, Bakshandeh K. Clinical echinococcosis. *Ann Surg* **1975**;182:541–546
2. Emany HDM, Assadian A. Unusual presentation of hydatid disease. *Am Surg* **1976**;42:875–878
3. Bretagne S, Robert B, Vidaud D, Goosens M, Houin R. Structure of the *Echinococcus multilocularis* U1sn RNA gene repeat. *Mol Biochem Parasitol* **1991**;46:285–292
4. Horton RJ. Chemotherapy of *Echinococcus* infection in man with albendazole. *Trans R Soc Trop Med Hyg* **1989**;83:97–102
5. Munoz Sanz A, Idefonso JA, Saenz De Santamaria FJ. Hidatidosis de tejido celular subcutaneo. *Med Clin (Barc)* **1985**;51:645
6. Rickard MD, Lighowlers MW. Immunodiagnosis of hydatid disease. In: Thompson RCA, ed. *The biology of* Echinococcus *and hydatid disease.* London: Allen & Unwin, **1986**:217–249
7. Bezzi M, Teggi A, De Rosa F, et al. Abdominal hydatid disease: US findings during medical treatment. *Radiology* **1987**;162:91–95
8. Marani SAD, Canossi GC, Nicoli FA, Alberti SP, Monni SG, Casolo PM. Hydatid disease: MR imaging study. *Radiology* **1990**;175:701–706