

## Cystic thigh mass in an 18 year old girl: diagnosis and discussion

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### Diagnosis

Magnetic resonance imaging (MRI) of the thigh revealed a cystic mass with multiple smaller cysts consistent with daughter cysts. The wall of the parent cyst was hypointense on T2-weighted image and enhanced following contrast material administration. The enhancement of the parent cyst wall was related to the inflammatory changes of the surrounding tissues and also because of the blood vessels providing nutrients to the parasite. The walls of the daughter cysts were not discernible in addition they did not enhance since they were non-vascularized free floating cystic structures in the parent cyst. Diffusion-weighted imaging (DWI) revealed restricted diffusion of the parent cyst. In contrast diffusion was increased in the daughter cysts. Histopathological examination of the cystic mass revealed scolices in

laminated fibrous wall of hydatid cysts. The final diagnosis was multivesicular hydatid cyst of the thigh.

### Discussion

Echinococcosis is a zoonotic infection caused by *Echinococcus granulosus*. In humans, the infestation is usually located in the liver (75%) or lungs (15%). Primary muscular hydatid cyst is very rare (0,5%–3%) [1–3]. Preoperative diagnosis is mandatory in order to prevent complications [4, 5]. Ultrasonography is the first diagnostic procedure to be chosen, however, MRI provides more detailed information with its high soft tissue resolution. Parent and daughter cyst signals may show variability depending on their viability [5]. Garcia et al. reported the characteristic features of soft tissue hydatid cysts as cystic lesions with or without hypointense peripheral ring (“rim sign”) [5]. In their study, related to the presence and absence, of viable scolices, daughter cysts were seen either as high or low signal intensity on T2-weighted images. In non-complicated cases the parent cysts were slightly hyperintense on T1-weighted and, hypointense on T2-weighted sequences in concordance with this case [5]. The restricted diffusion seen in the parent cyst may be the result of the dense viscous content composed of salts, enzymes, proteins, and toxic substances. However the diffusion restriction surrounding the cyst is probably a consequent of inflammatory tissue reaction around the cyst. Also the germinal membrane is a cellular structure which also contributes to the restriction of diffusion. In this case the daughter cysts revealed increased diffusion which is probably related to the less dense content [4]. Although hydatid disease involving soft tissues is a rare, the diagnosis must be kept in mind, in the differential diagnosis of soft tissue cystic masses. DWI findings alone should not be accepted as a single diagnostic

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criterion since it may lead to wrong diagnoses as a consequence of overlapping diffusion findings of different masses.

## References

1. Duygulu F, Karaoğlu S, Erdoğan N, Yıldız O. Primary hydatid cyst of the thigh: a case report of an unusual localization. *Turk J Pediatr* 2006; 48: 256–259.
2. Martin J, Marco V, Zidan A, Marco C. Hydatid disease of the soft tissues of the lower limb: findings in three cases. *Skeletal Radiol* 1993; 22: 511–514.
3. Kotil K, Tatar Z, Bilge T. Spinal hydatidosis accompanied by a secondary infection. *J Neurosurg Spine* 2007; 6: 585–590.
4. Khuroo MS. Hydatid disease: current status and recent advances. *Ann Saudi Med* 2002; 22: 56–64.
5. García-Díez AI, Ros Mendoza LH, Villacampa VM, Cózar M, Fuertes MI. MRI evaluation of soft tissue hydatid disease. *Eur Radiol* 2000; 10: 462–466.