Humeral hydatid cyst complicated with extraosseous involvement: a case of unusual location of echinococcosis

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Case Type: Clinical Cases
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Patient: 17 years, male

Clinical History:

Previous 5 months: a painless, enlarging mass in the left arm. Physical examination: Tenderness and moderate powerloss of the left arm. The shoulder’s motion was limited in abduction. Imaging: Distortion of the axis and regional expansion of the humeral shaft with minimal thinning areas of the cortex. Polycystic appearance of the bone marrow with regional calcifications into the lumen and at the soft tissues of the upper arm. A large cystic lesion at the upper arm with some foci of calcifications. 99mTc-DMP scintigraphy showed significant deposition of the radionuclide at the distal part of the left humerus and elbow as well as a smaller deposition foci at the upper 1/3 of it.

Imaging Findings:

A 17-year-old male was admitted to hospital with a five months history of a painless, enlarging mass in the left arm. He had no fever, chills, weight loss or prior trauma. Physical examination revealed tenderness and moderate powerloss. The shoulder’s motion was limited in abduction. Plain film of the left humerus demonstrated distortion of the axis, regional expansion of the humeral shaft with minimal thinning areas of the cortex. Additionally, numerous radiolucent areas of the humeral shaft were observed especially at the distal part of the bone. No calcification of the soft tissues was noticed (figure 1a,1b). Computed tomography examination showed significant destruction of the trabecular bone of the humeral head and polycystic appearance of the bone marrow with regional calcifications into the lumen. Additionally, a large cystic lesion between medial and lateral head of the triceps muscle with some foci of calcifications were observed (figure 2a,2b). Magnetic resonance imaging revealed the multilocular nature of the lesion into the humeral lumen with a cystic lesion involving the soft tissues of the upper arm. The cyst showed contrast enhancement at the pericyst capsule of the cyst after Magnevist administration (image 4a,4b). 99mTc-DMP scintigraphy showed significant deposition of the radionuclide at the distal part of the left humerus and elbow as well as a smaller deposition foci at the upper 1/3 of it (figure 3).

Discussion:

Hydatid disease, also referred to as “echinococcosis”, is a parasitic disease most commonly caused by Echinococcus granulosus that seldom involves the skeleton and is still common in the countries of the temperate zones. Skeletal involvement by Echinococcus granulosus is a rare localization of echinococcosis since it occurs in only 0.28-3.1 % of hydatid disease cases. Moreover, humeral involvement is extremely rare, to our knowledge, only two cases are reported in the literature. CT and MRI examinations of our case determined the extent of the lesion,
the relation to the normal tissues, and the preoperative planning of the surgical approach. The CT examination provided a precise assessment of the osseous part of the lesion, the extension into the soft tissues, and the calcifications into the humeral lumen. The MR imaging with the capability of demonstrating a very evocative cyst images, is the exam of choice in order to appreciate the disease’s extent and the degree of medular sufferance. Moreover, MR imaging is very useful in determining the extent of surgery. Our patient’s physical examination and X-ray features did not give any clues as to the possible diagnosis. However, CT and MRI examination displayed the multicystic appearance of the lesion at the humeral diaphysis as well as at the soft tissues of the upper arm but with no other specific and characteristic feature of hydatidosis such as the «water-lily» sign. Preoperative recognition of this rare entity is clearly difficult, particularly since all of the clinical signs of acute inflammation are absent. The purpose of the present study is to alert the reader to this rare entity so that open and percutaneous needle biopsies will be avoided. Furthermore, humeral or other long bone Echinococcus infestation may mimic a neoplastic process, leading to misdiagnosis. In conclusion, preoperative differential diagnosis of humeral cystic lesions should include hydatid disease, especially in endemic and sporadic echinococcosis areas, since it may easily be missed unless kept in mind. MRI is the method of choice for evaluation, preoperative planning of the surgical approach, and correct diagnosis of such lesions.

**Differential Diagnosis List:** Humeral hydatid cyst complicated with extraosseous involvement: a case of unusual location of echinococcosis

**Final Diagnosis:** Humeral hydatid cyst complicated with extraosseous involvement: a case of unusual location of echinococcosis

**References:**


Figure 1

Description: Plain film of the left humerus demonstrates distortion of the axis, regional expansion of the humeral shaft with minimal thinning areas of the cortex. Additionally, numerus radiolucent areas of the humeral shaft are observed especially at the distal part of the bone. No calcification of the soft tissues is noticed. Origin:

Description: Enlargement shows numerus radiolucent areas of the humeral shaft at the distal part of the bone. Origin:
Figure 2

Description: Computed tomography examination shows significant destruction of the trabecular bone of the humeral head and polycystic appearance of the bone marrow with regional calcifications into the lumen. Origin:

Description: Additionally, a large cystic lesion between medial and lateral head of the triceps muscle with some foci of calcifications are observed. Origin:
Description: 99mTc-DMP scintigraphy shows significant deposition of the radionuclide at the distal part of the left humerus and elbow as well as a smaller deposition foci at the upper 1/3 of it. Origin:
Description: Sagital T1-weighted MR image demonstrates the multilocular nature of the lesion into the humeral lumen with a cystic lesion with high signal intensity due to hemorrhage, involving the soft tissues of the upper arm. Origin:
Description: Coronal T2-weighted MR image shows the high signal intensity of the cyst. Origin:
Description: 99mTc-DMP scintigraphy shows significant deposition of the radionuclide at the distal part of the left humerus and elbow as well as a smaller deposition foci at the upper 1/3 of it. Origin: