CASE REPORT

Chronic Arterial Occlusion Produced by Hydatid Cyst Development in the Lumen of the Femoral Artery

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Introduction

Hydatid disease is caused by Echinococcus granulosus, a tapeworm which forms larval cysts in human tissue. Dogs, and in some endemic areas foxes, are the definite hosts. These animals eat sheep carcasses containing hydatid cysts. Human infection follows ingestion of material contaminated by dog faeces. The ova penetrate the intestine and pass via portal circulation to the liver or lungs where they develop into hydatid cysts. The embryos that escape the barriers of the portal sinusoids or pulmonary capillaries enter into the systemic circulation and can implant in any tissue or organ. Hydatid cysts may develop in the spleen, kidneys, pancreas, brain, myocardium, thyroid gland, musculoskeletal and soft tissue. Arterial involvement is extremely rare, most being peripheral embolic episodes with the heart and aorta as primary sites of origin.

In our reported case, a hydatid cyst developed in the arterial lumen of the femoral artery, with coexisting cysts in the adductor muscles and the scrotum.

Case Report

A 50-year-old male patient complained of intermittent claudication (IC) of the lower extremity for 10 years. Nine years prior to admission he had undergone a left lumbar sympathectomy for the same symptoms, at another hospital, without improvement. Physical examination and laboratory findings included bilateral scrotum enlargement, no leg pulses and eosinophilia.

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Surgical exploration of the femoral artery by groin incision showed an unusual sausage-like enlargement of the artery, with peripheral extension. Arteriotomy indicated hydatid vesicles and no blood flow. No other surgical manoeuvre was performed at that time and the patient underwent further investigation. CT scanning revealed hydatid disease in the femoral artery with peripheral extension to the popliteal artery and isolated hydatid cysts in the adductor muscle group and bilaterally in the scrotum (Fig. 2). No other organ was involved. Serology tests for hydatid disease were all positive.

A few days later, the patient underwent reoperation for cyst dissection and revascularisation. The surgical finding, following re-exploration, was a symmetrical sausage-like enlargement, 25 cm in length, of the femoral artery. This mass was a multi-vesicular cyst extending from the common femoral artery to the popliteal artery 10 cm above the knee joint. Total resection of the infected artery was performed and the occluded external iliac artery was sutured. In order to avoid dissemination of the disease, an extra-anatomical bypass graft (PTFE, Gore-tex) was placed from the contralateral femoral artery to the popliteal artery. Resection of the infected adductor muscle group and drainage of the scrotum cavity were performed, following treatment with formaldehyde solution. Pathological examination confirmed that the hydatid cyst had developed in the lumen of the femoral artery (Figs 3 and 4).

The postoperative course was uneventful and the patient was discharged on the 12th postoperative day. The patient was treated with albendazole, 800 mg daily. This was continued for 6 months, without complications. At 2-year follow-up no local or further hydatid cysts were detected by all body CT scans.

Hydatid disease is quite common in Greece, with almost 600 surgical interventions per year. Almost all have liver or pulmonary cysts. Acute aterial ischaemia by hydatid cyst emboli is rare and arterial localisation of the parasite embryo is exceptional. How the arterial wall is affected remains unclear. Some authors report that scolices erode the arterial wall from the adjacent tissue, and others are of the opinion that the parasite reaches the arterial wall via the vasa vasorum. In our case, the hydatid location was in the arterial lumen; pathological examination indicated no sites of probable primary intra-arterial wall location. In addition, the obstruction could not have been of embolic origin because of the absence of acute ischaemic symptoms.
in the patient's history, as well as the absence of a proximal site of embolism on CT scanning.

We have found only three cases of intra-arterial hydatid cyst development.

The importance of our case is the unusual location of the hydatid cysts. Preoperative diagnosis of echinococcosis in locations other than the liver and lungs is difficult, especially in regions which are not endemic. Hydatid disease should be included in the differential diagnosis of cystic arterial masses.

References


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