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Hydatid cyst of biceps brachii associated with peripheral neuropathy

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ABSTRACT

INTRODUCTION: Hydatidosis represents the most significant parasitic disorder in the Mediterranean countries and leads to major problems through unfavorable effects on the public health and national economy. Localization of the primary cyst hydatid infection in the extremity is rare and biceps brachii localization is also rarely reported in the literature.

PRESENTATION OF CASE: A 43-year-old woman, who presented with the complaints of mass and pain in the left arm and numbness of the hand. Laboratory investigations, X-ray and magnetic resonance (MRI) findings revealed hydatid cyst of the biceps brachii muscle. The mass was totally excised and the diagnosis was confirmed by the macroscopic images of the mass and the pathologic results. After the surgery, the patient had an improvement in the nerve compression findings including numbness of the hand and the upper extremity and pain.

DISCUSSION: Localization of a primary cyst hydatid infection in the upper extremity is rare and there are no reports of peripheral neuropathy secondary to mass effect. Even if the pre-surgical electromyography performed for the nerve conduction study reveals a normal result, the potential for the hydatid cysts to cause nerve compression should be taken into consideration in such patients.

CONCLUSION: Cases of concomitant neurologic findings and complaints secondary to peripheral nerve compression are very rare. The clinical findings should not be ruled out even if the EMG result is negative.

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1. Introduction

Hydatidosis is a parasitic and zoonotic disease of the humans and animals. It represents the most significant parasitic disorder in the Mediterranean countries and leads to major problems through unfavorable effects on the public health and national economy [1]. Located in the Mediterranean region, Turkey is among the endemic countries [2].

Hydatid cyst most commonly occurs in the young population and the herds of sheep-goats raised by the countries and the relation between the humans and dogs are effective on the increased prevalence [3]. Particularly, the eggs swallowed as a result of the human-animal contact under rural conditions crack in the intestinal system and reach the liver via portal venous route. The liver (60%) and the lungs (30%) are the most commonly affected organs with the brain, the heart, the kidneys, the ureter, the spleen,

the uterus, the pancreas, the diaphragm and the extremity muscles being rarely involved [4]. Localization of the primary cyst hydatid infection in the extremity is rare and biceps brachii localization is also rarely reported in the literature [5,6]. In this report, a 43-year-old woman, who presented with the complaints of mass and pain in the left arm, and numbness of the hand, and diagnosed as cyst hydatid of the biceps brachii muscle, was presented.

2. Presentation of case

A 43-year-old woman presented with the complaints of mass and pain in the left arm, and numbness of the hand. The mass with an indolent course for 7 years had started exhibiting progressive enlargement and pain, resulting in a limitation in daily activities. The physical examination of the patient, who had a history of living in the village and sheep raising, revealed a soft, mobile fluctuating mass of 150 * 100 mm size that extended toward the medial site from the upper-middle part of the left arm. No findings of an increase in heat or redness on the mass were detected. The laboratory findings were as follows: leukocytes, CRP, sedimentation, eosinophilia and hemoglobin are normal. The cyst hydatid indirect hemagglutination test was strongly positive. X-ray showed soft tissue swelling. Magnetic resonance (MR) images of the left

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Fig. 1. (A) Pre-operative X-ray, (B) coronal, (C) sagittal MR , and (D) Post-operative X-ray.

arm revealed a cystic lobulated mass of 150 * 90 * 55 mm size containing septa and minimal soft tissue density and fluid levels, which showed peripheral contrast uptake following IVCM and was located under the skin in anterior adjacency to the biceps muscle, extending from the 1/3 upper–middle section anterior toward the medial section (Fig. 1). In addition, axial and coronal sections showed close adjacency of the mass to the neurovascular bundle (Fig. 2). Whether there were any concomitant hydatid cysts in the other organs was investigated via whole abdominal, thoracic and cerebral computed tomography and no pathological findings were detected. The patient who had numbness in the left hand underwent electromyography (EMG) and was considered to be normal.

The patient was operated in supine position under general anesthesia. Longitudinal incision was performed from the left arm anterior section and over the mass. We reached the mass proceeding beyond the subcutaneous section. During dissection, we observed that the mass was on the neurovascular bundle and caused compression, but it was not attached to it. The cyst was carefully scraped from the adjacent structures and totally excised without causing any rupture. After excision, the median nerve was seen to be relieved of the pressure it had been exposed to with the effect of the mass. Following irrigation of the cystic cavity with hypertonic sodium chloride solution, the cyst wall was excised. A large number of viscous, gelatinous-appearing cysts with an irregular ragged inner surface were observed

macroscopically inside the mass transferred into the investigation container (Fig. 3). The histopathological examination of the cyst wall revealed a characteristic eosinophilic ectocyst with a chitin membrane. No intraoperative or postoperative complications were seen. As postoperative chemotherapy, high dose albendazole was initiated for 6 weeks, and a favorable response was obtained. The patient had complaints of numbness in the early period, which spontaneously recovered and no recurrence was observed on early or long-term radiographs or USG examinations.

The patient was informed that the data concerning his case would be submitted for publication.

3. Discussion

Cyst hydatid is commonly observed in the Mediterranean, Baltic states, South America, Australia, and the Middle East, primarily in sheep-raising countries [7]. The liver and the lungs being the most commonly involved organs, this condition can occur in all organs and tissues [8]. The skeletal system is rarely involved [9,10]. Because the echinococcus entering the body via intestinal route would pass into the venous circulation system and respectively pass the liver and the lungs, which have a filtering, function.

Primary musculoskeletal cyst hydatid generally affects the proximal muscle groups and localizes more commonly in the lower extremity compared to the upper extremity [11,12]. Biceps brachii

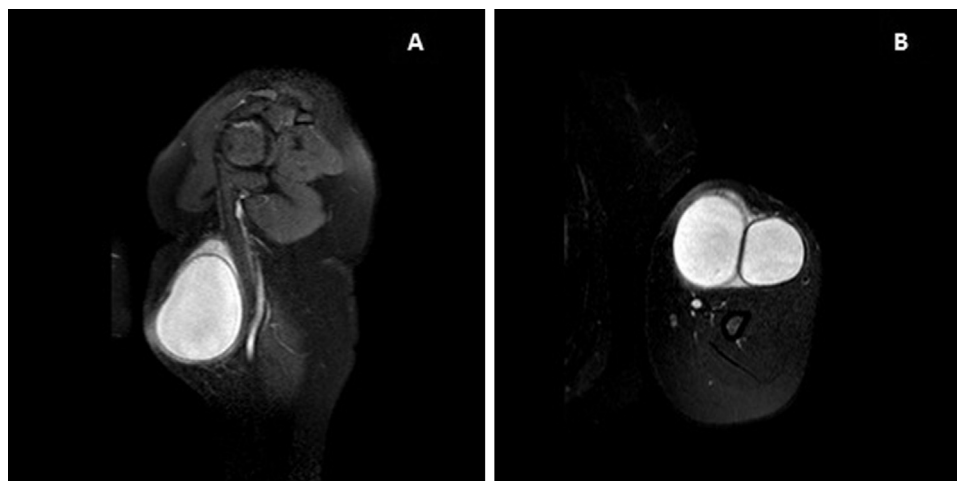


Fig. 2. The MR sections showing the association between the mass and the neurovascular bundle. (A) sagittal, (B) axial.

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