Percutaneous treatment of a parotid gland hydatid cyst: a possible alternative to surgery

Abstract Although the most involved organs are liver and lung, hydatid cysts are very rarely seen in the head and neck region. Only a few cases with hydatid cyst in parotid gland have been reported in the literature. We present the findings of 18 months of follow-up of a case with a hydatid cyst in parotid gland treated percutaneously by using PAIR technique. To our knowledge, this is the first case of parotid gland hydatid cyst who underwent percutaneous treatment. Percutaneous treatment of parotid hydatid cyst seems to be a safe and effective procedure as a possible alternative to surgery.

Keywords Hydatid cyst · Parotid gland · Percutaneous treatment

Introduction

Hydatid disease is a serious medical and public health problem that results in morbidity and even mortality. It is an endemic disease in some parts of the world such as in the Mediterranean, The Middle East, and South American countries. Although the most involved organs are liver and lung, respectively, any organ or tissue can be the primary site of hydatid disease. Hydatid cysts are very rarely located in the head and neck region; however, only a few cases with hydatid cyst in parotid gland have been reported in the literature [1, 2, 3, 4].

The traditional treatment of choice for a hydatid cyst in parotid gland is surgery as for the cysts located elsewhere. Therefore, all the reported cases were treated by surgical means. However, intraoperative and postoperative complications, and high recurrence rates, are not rare. Successful percutaneous treatment of liver, kidney, pulmonary, and orbital hydatid cysts have been reported in past decade [5, 6, 7, 8].

To our knowledge, our patient with a hydatid cyst in parotid gland has been the first one to undergo percutaneous treatment. We present the findings of 18 months of follow-up of a case with a hydatid cyst in parotid gland treated percutaneously.

Case report

A 22-year-old woman had progressively increasing swelling in the right preauricular region for a period of 15 years. On physical examination, she had a 10 × 5 × 5-cm, immobile, painless, hard mass...
over the right preauricular region. Intraoral examination revealed displacement of the right palatine tonsil towards the midline and soft palate anteriorly. On CT examination, a 10 × 5 × 5-cm mass originating from the right parotid gland and filling the right infratemporal fossa in the deeper lobe of the parotid was delineated (Fig. 1a). Results of other laboratory tests, abdominal ultrasonography, and chest X-ray were normal. Total parotidectomy was performed under general anesthesia. As crystal-clear liquid spurted out during the operation; it was therefore suspected that the lesion was a hydatid cyst. The operation field was then washed several times with 20% hypertonic saline. Fragments of germinative and laminated membranes were demonstrated on the histological examination confirming the diagnosis of hydatid disease.

After a 1-year follow-up period, the patient was admitted to the hospital with facial paralysis and preauricular mass over the same region operated on previously. The patient had a 45 × 35 × 35-mm (estimated volume approximately 25 ml) immobile, painless, hard mass over the right preauricular region. According to the House-Brackmann classification, 4/6° facial paralysis on clinical examination was detected [9]. Ultrasonographic examination revealed that the mass was a recurrent hydatid cyst (Fig. 1b).

Treatment technique
Albendazole (10 mg/kg day) was administered orally to the patient for 1 week before the procedure and 2 weeks after the procedure as a prophylactic measure to prevent spillage of the disease. The percutaneous intervention were performed under sonographic guidance. After maintaining standard sterile conditions, cyst puncture was carried out under local anesthesia. The cyst was treated by PAIR technique (Puncture–Aspiration of cyst contents–Injection of hypertonic saline solution–Reaspiration) as described previously [6]. A Seldinger needle was used for the puncture of the cyst. As soon as it entered the cavity, 35% of the estimated volume of cystic fluid was aspirated. The cavity was filled with hypertonic saline (20% NaCl) to an amount 10% lesser than the aspirated volume. Cyst aspiration and refilling with hypertonic saline was repeated until the complete separation of the endocyst (germinative and laminated membranes) from pericyst. This lasted for at least 10 min after reaspiration of the cystic content. Cyst puncturing, aspiration, and refilling of the cystic cavity and separation of the endocyst were monitored continuously by sonography. The diagnosis of hydatid disease was confirmed by microscopic examination which revealed the fragments of membranes and protoscolices.

Fig. 1a–d A 22-year-old woman with a progressively increasing swelling in the right preauricular region for a period of 15 years. 

a Preoperative CT examination revealed a 10 × 5 × 5-cm mass containing multiple daughter cysts located in the right parotid gland. 
b Ultrasound examination demonstrated a type-I recurrent hydatid cyst in the same region before percutaneous intervention. 
c Ultrasound and d CT scan 6 months after the percutaneous treatment. Ultrasound examination showed a smaller, solid, hypocholic mass without any fluid component called “pseudotumor appearance.” The CT scan delineated a hypodense mass confirming the same findings.