Case Report

# Primary hydatid cyst of parotid gland—an aspirate with a clue to diagnosis

Neena Kasliwal, Geeta Pachori, Varna Indushekar, Kalpana Sharma

Department of Pathology, JLN Medical College, Ajmer, Rajasthan, India.
Correspondence to: Varna Indushekar, E-mail: var9colors@gmail.com

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**Abstract**

Primary hydatid cyst of salivary glands are uncommon. Although very few cases have been reviewed in parotid and submandibular salivary glands, the characteristic cytological features were rarely reported. Here we report a case of 50 year old female, presented with parotid swelling that was diagnosed as hydatid cyst on fine needle aspiration cytology (FNAC).

**KEY WORDS:** Hydatid cyst, fine needle aspiration cytology, parotid gland

## Introduction

Hydatidosis is a tissue infection with man as an accidental intermediate host caused by the larval stage of *Echinococcus granulosus* or *Echinococcus multilocularis*.[1] Human ingestion of food contaminated by *Echinococcus* ova leads to the hatching of ova in the gastrointestinal tract. Most of the ova are filtered by the liver or lung, but some escape into the general circulation to involve any tissues throughout the body.

## Case Report

A 50-year-old woman, field laborer by occupation, presented with a swelling in preauricular area since one-and-a-half years. On examination, the swelling, initially, measured 8 × 8 cm, soft consistency, nontender, and freely mobile. Fine needle aspiration cytology (FNAC) was performed using a 10-mL disposable syringe using a 22-G needle. Multiple aspirations were performed. One of the aspirations yielded 5 mL of crystal clear watery fluid. This fluid was processed routinely, and the slides were prepared. While preparing the slide from cytocentrifuged material, it appeared to be of gritty sensation, probably, owing to calcified debris. Smears were dried and, then, stained with Giemsa stain.

To our surprise, we found the cytology smears contained characteristic parasitic elements such as scolices, hooklets, homogeneous eosinophilic-laminated membrane [Figure 1], and calcospherules; a diagnosis of hydatid cyst in parotid gland was made.

Further evaluation by ultrasonography (USG) and computed tomography (CT) scan was advised. USG of the parotid region revealed a cystic mass with a solid component. Complete blood count and ESR were at normal levelsand showed no eosinophilia. Chest X-ray and abdominal USG examinations showed normal findings.

The patient underwent superficial parotidectomy with a caution of not to rupture the cyst and completely remove the tissue. Specimen was sent for histopathological examination, which confirmed to be a hydatid cyst of the parotid gland [Figure 2].

## Discussion

Hydatid disease is a parasitosis also known as hydatidosis or echinococcosis. It is the most widespread serious human cestode infection in the world and transmitted from domestic and wild members of the canine family.[1] Hydatid cysts are commonly diagnosed in the liver (70%) and lungs (25%); other sites that are less frequently involved are the spleen, kidneys, bile ducts, mesentery, heart, brain, muscles, soft tissue, head and neck regions, and breast.[2] In children, lungs are the most common site of infection, whereas in adults, liver is infected most frequently.[2] Head and neck regions are

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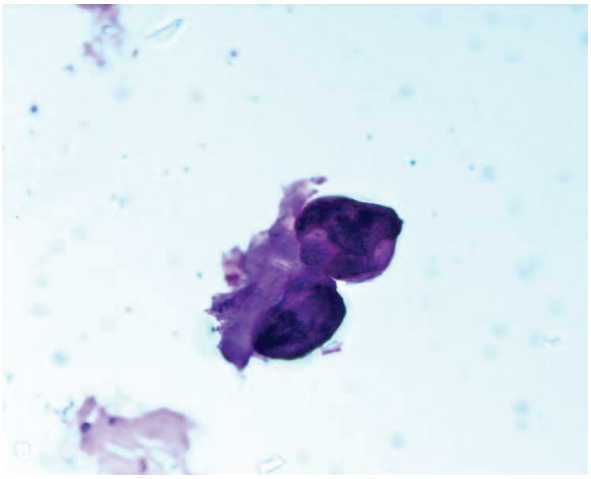

**Figure 1:** Giemsa-stained cytology smear showing scolices containing hooklets of hydatid cyst (40×).

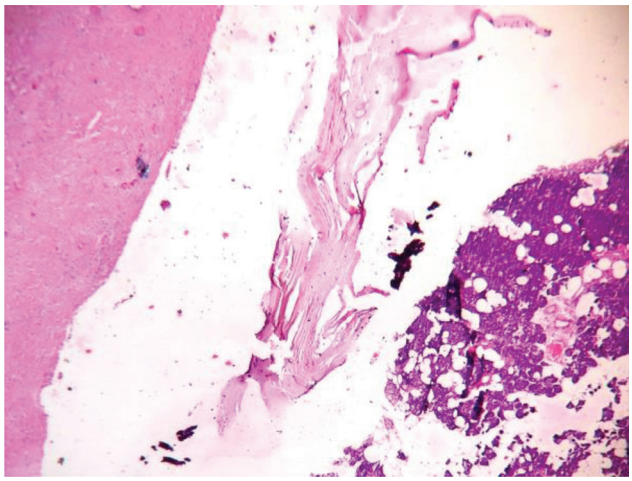

**Figure 2:** Section of parotid gland shows normal serous acini on the left corner with homogeneous eosinophilic-laminated membrane of hydatid cyst and fibrous capsule at top-right corner (H&E, 10×).

uncommon even in countries where *Echinococcus* infestation is high. Prevalence of hydatid cyst in head and neck regions is rare, and very few case reports of it are available in the literature.[1]

One case each of hydatid cyst in the preauricular region was reported by Tekin et al.[3] and Darabi et al.[4]

Intraparotid cystic lesions comprise approximately 5% of all salivary gland tumors; many of them represent cystic components of neoplasms.[5] A variety of neoplastic and nonneoplastic lesions of the salivary glands have a predominantly cystic architecture. Among nonneoplastic lesions, congenital and acquired cystic lesions of parotid gland should be differentiated from hydatid cyst. Congenital cysts include dermoid and epidermoid cysts, first bronchial cleft cysts, and cystic hygromas.

Fine needle aspirates of these lesions yield serous or mucoid material, frequently of low cellularity. Such aspirates may also be obtained from mucus-retention cysts, lymphoepithelial cysts, cystadenomas, Warthin's tumors, cystic pleomorphic adenomas, low-grade mucoepidermoid carcinomas, cystadenocarcinomas, and, very rarely, hydatid cyst of the parotid gland.[6]

Although hydatid cyst of parotid gland is rare, it should be included in the differential diagnosis of cystic lesions, especially in areas with high prevalence. The cellularity of the fluid obtained from these lesions may be exceedingly scant or absent, making cytologic diagnosis difficult and, at times, impossible. Hence, definitive cytologic diagnosis can be made only after a careful examination of the cytocentrifuged smears.

Performing aspiration on the hydatid cyst for diagnosis is controversial owing to the risk of precipitating acute anaphylaxis or spread of daughter cysts.[7] However, few studies showed no sequelae observed that was attributable to aspiration done on hydatid cyst, especially, in superficial locations, and properly done.[8,9]

In addition, specific serological tests such as Casoni's test, indirect hemagglutination, and ELISA can be used; however, negative serology does not exclude the diagnosis. Among the imaging modalities, CT scan of maxilla facial region has shown to be a valuable method for establishing the appropriate diagnosis.

Surgery remains the standard therapy, because there is no response to drug administration. Therefore, FNAC becomes an important tool for preoperative diagnosis of hydatid cyst of parotid gland, and surgeons can take necessary measures not to rupture the cyst during surgery, which may be life-threatening.

## Conclusion

FNAC is a simple diagnostic procedure performed in all cystic lesions with no predilection to specific site. Hydatid cyst is one cyst in which FNAC is not advised because of anaphylaxis owing to the cyst fluid. However, in our case, there was no postprocedure complications reported. Hence, FNAC can be performed in the superficial cysts of hydatid occurring in head and neck regions with no or minimal complications, and it can be managed accordingly. The characteristic crystal clear watery fluid aspirated and other characteristic cytological features are a clue to diagnosis of hydatid disease and, hence, the role of FNAC in hydatid cyst. Hydatid cyst should be included in the list of cystic lesions encountered anywhere in the body, more specifically in endemic areas.

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