

Cytomorphology of Hydatid Cyst: Two Case Reports

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ABSTRACT

Hydatid disease is a parasitic disease caused by larvae of Echinococcus. The disease is distributed worldwide. However there are very few reports on cytology findings of hydatid disease as FNA in such cases is contraindicated. Usually hydatid disease is diagnosed on histopathology, but recently fine needle aspiration cytology of hydatid cyst is emerging and is still an issue of debate that whether it can cause dissemination of parasite in the body or not. Due to fewer studies on cytology it poses a problem in diagnosing hydatid disease on cytology. We present two case reports of hydatid cyst on cytology.

Keywords: Hydatid cyst, Hydatid disease, Echinococcus larvae

INTRODUCTION

Hydatid cyst is a disease caused by larvae of Echinococcus. The disease is distributed worldwide; however it is endemic in sheep-raising regions especially Mediterranean countries^[1]. Very few cases of fine needle aspiration cytology of hydatid cysts has been described previously^[2-5]. It is still a matter of debate that fine needle aspiration cytology of hydatid cyst is safe or not. We report two cases of hydatid cyst with focus on cytomorphology. Amongst the two cases one was imprint cytology and second was pleural fluid for cytology.

CASE REPORT

First case is of a 15 year old girl who presented with complaint of pain abdomen

since one month. The pain was dull, radiating to back and not relieved by medication. There was a history of consumption of non vegetarian diet. Ultrasonography revealed a large anechoic cyst measuring 8.7 x 8.4 cm and a possibility of mesenteric cyst was kept. CT Scan confirmed two mesenteric cysts of size 8.5 x 8 cm and 4.5 x 4 cm. Surgery was performed and the cysts were removed. We received imprint smears of the cyst in our department. Microscopic examination of the smears revealed numerous protoscolices in the shape of mushroom with hooklets, amorphous necrotic debris, numerous acute and chronic inflammatory infiltrate and acellular eosinophilic material with laminations suggestive of laminated membrane. A diagnosis of hydatid cyst was made which was later confirmed on histopathology findings of the cyst.

Second case is of a 60 year old female presenting with chest pain and difficulty in breathing. Ultrasound abdomen revealed an ill defined heterogeneously hypoechoic area with air foci and anechoic areas in segment VI and VII of liver. CECT chest and upper abdomen revealed findings suggestive of residual or recurrent hydatid cysts in liver with rupture into right lung. Pleural fluid was aspirated and received in our department. After processing of the fluid smears were prepared and microscopic examination revealed amorphous necrotic debris, acute and chronic inflammatory infiltrate, few scolices with clearly visible

refractile rows of hooklets, detached refractile hooklets and basophilic laminated membrane. A diagnosis of hydatid cyst was made on fluid cytology. Further investigations for hydatid disease was revealed raised serum IGG values for echinococcus to 43.60 DU.

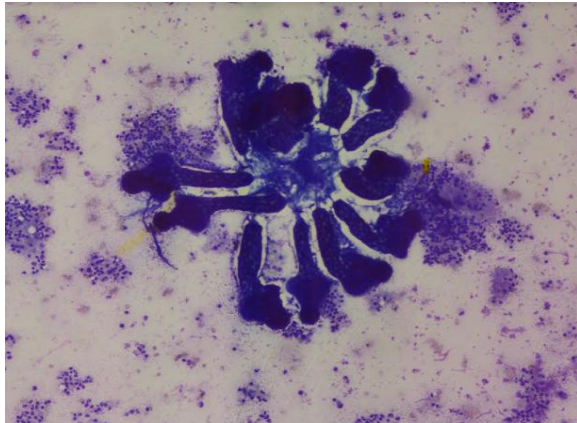


Figure 1: showing mushroom shaped protoscolices in an inflammatory background. (Giemsa 100x)

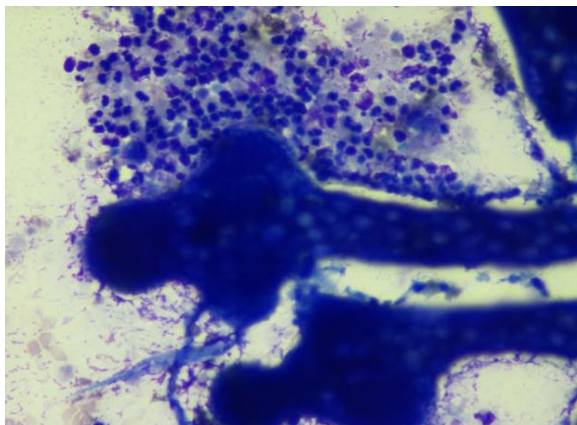


Figure 2: showing protoscolices with inflammatory cells. (Giemsa 400x)

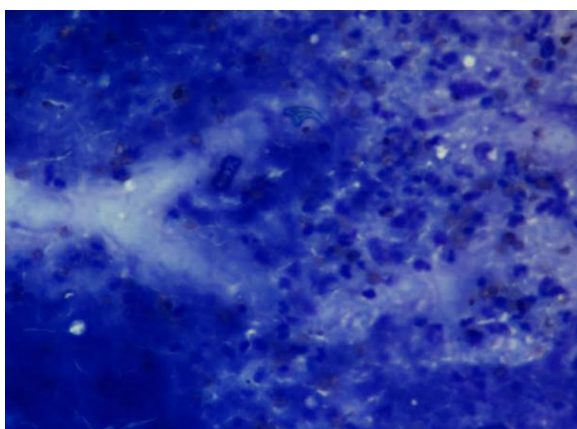


Figure 3: showing a hooklet in necrotoinflammatory background (Giemsa 400x)

DISCUSSION

Hydatid disease is caused by the larvae of *Echinococcus* and the most common species are *E.granulosus* and *E.multilocularis*. The definitive host for the parasite is dog and intermediate hosts are humans. Humans get infected by the consumption of ova which develops into embryos in the proximal small intestine and reach the liver through the blood thus causing the echinococcal cysts. Via the blood stream the embryos can reach various organs. Majority of cysts occur in the right lobe of liver but they can be multiple and involve any lobe. A hydatid cyst is white spherical, filled with fluid and may range from few millimeters to many centimeters in diameter^[1].

Hydatid cyst is one a contraindication for FNA as it can cause anaphylaxis and dissemination. However, many cytological diagnosis of hydatid disease has been made without any complication^[6-8]. The diagnosis of hydatid cyst can be made by serology and imaging studies but the confirmation relies on histopathological examination and cytology findings. On cytology, findings that are consistent with hydatid cysts are presence of protoscolices, hooklets, fragments of laminated membrane and amorphous necrotic debris in the background^[2-5]. Some cases however shows only laminated membranes in the inflammatory background^[8-10]. In our first case all the characteristic findings were seen including protoscolices, hooklets, necrotic debris and laminated membrane. Our second case also revealed all the findings however the hooklets were found more detached and few scolices only. Cytologic diagnosis of hydatid cyst has previously been reported in various organs. The present cytology findings of hydatid cyst were made on imprint smears from mesenteric cyst and pleural fluid.

In conclusion, the diagnosis of hydatid cyst should be kept in mind when there is a cystic lesion and cytology findings reveal amorphous necrotic debris. Cytology findings are useful in making a diagnosis of

hydatid cyst and may help in timely management of the disease.

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How to cite this article: Sarohi M, Mohindroo S, Rao M. Cytomorphology of hydatid cyst: Two case reports. *International Journal of Research and Review*. 2021; 8(2): 34-36.
