

Case Report

Diagnosis of Primary Hydatid Cyst in Thyroid by Fine Needle Aspiration Cytology

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Abstract

A case of thyroid swelling occurring in a 30 years old male, diagnosed as primary hydatid cyst of thyroid gland by fine needle aspiration cytology (FNAC) is being reported for its extreme rarity. The FNAC diagnosis of hydatid cyst of thyroid gland was made with certainty by the presence of fragments of hyaline laminated cell wall membrane, scolices, hooklets and few brood capsules in a background of cellular debris in the smears. The possibility of hydatid cyst should be kept in mind during the FNAC of a cystic lesion, even in an unusual location for it. Preoperative FNAC diagnosis of hydatid cyst will be helpful to take appropriate anti-anaphylactic measures and necessary care to avoid the spread of protoscolices during surgical extirpation of the cyst.

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Introduction

The hydatid cyst (cystic echinococcosis) is one of the most serious helminthic diseases of human being with worldwide distribution, caused by larval form of the cestode worm of *Echinococcus*. It may develop in almost any part of the body. The most common location is liver (75%), followed by lung (15%) and only 10% occur in rest of the body.¹ Even among unusual sites, primary hydatid cyst of thyroid gland is an exceptional localization.² We are reporting this case to emphasize the role of fine needle aspiration cytology (FNAC) in the early diagnosis of primary hydatid cyst in thyroid gland with or without minimal complication.

Case Report

A 30 years old male presented with right sided thyroid swelling (Fig.1) of two and half years duration. The swelling was slow growing. The patient was of average built and nutrition and had no other associated complaints. Routine investigations including haemogram and chest radiographs were normal except mild hypothyroidism with mildly increased TSH level (7.2 mu/ml). Ultrasonography (USG) of thyroid gland revealed multiple varying sized thick walled well defined cysts. A descriptive diagnosis of

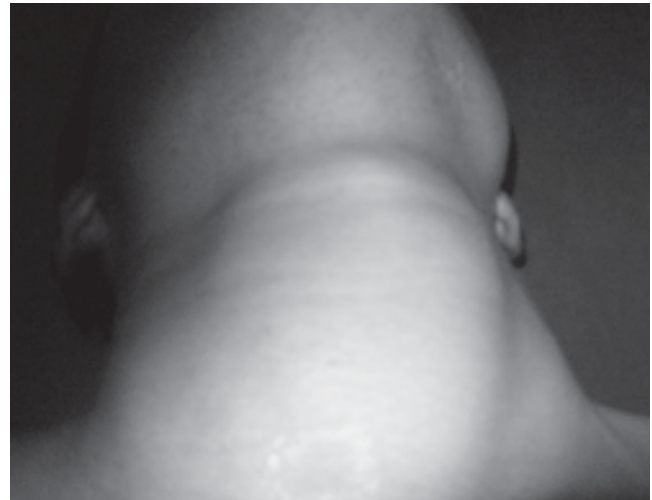


Fig. 1 : Nodular swelling of thyroid.

benign multicystic lesion of thyroid with the evidence of calcification was given by the radiologist (Fig. 2) and USG guided FNAC was advised by radiologist. It was performed using 23 G needle and thick turbid creamy fluid was aspirated. Post-FNAC period was uneventful. The FNAC smears were stained with May-Grünwald Giemsa (MGG) and Papanicolaou stain. The smears showed many fragments of hyaline, laminated cyst wall membrane in a background of cellular debris (Fig. 3). The diagnosis of hydatid cyst

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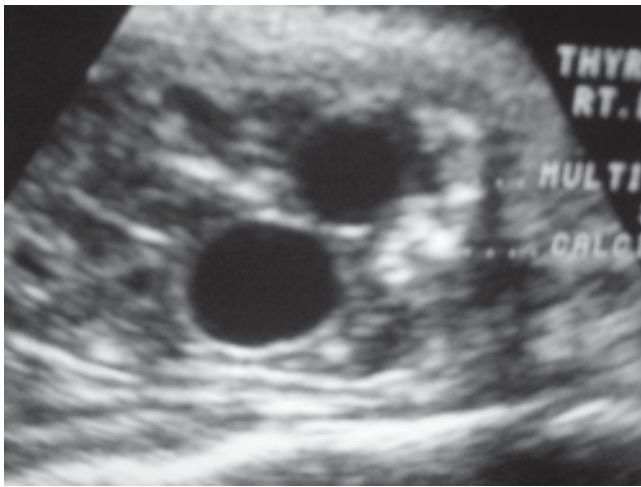


Fig. 2 : Two well defined anechoic cysts with calcification within the thyroid (USG photograph).

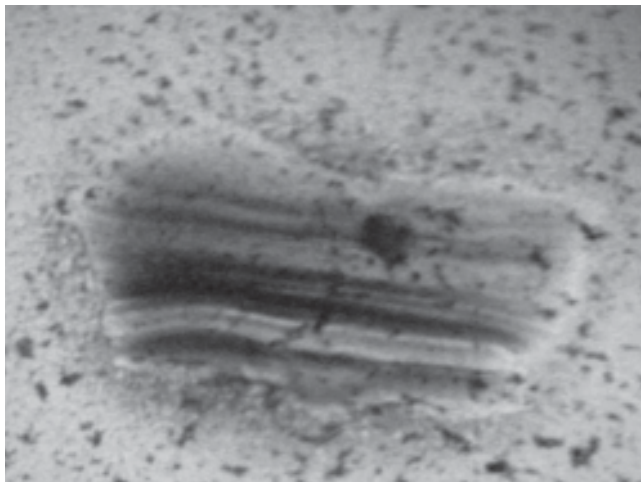


Fig. 3 : Fragments of the hyaline, laminated cyst wall membrane in a background of cellular debris (MGG, x 400).

was confirmed by the presence of scolices and hooklets of *Echinococcus*. In addition few brood capsules were also found in the smears (Fig. 4).

Subsequent computed tomography (CT) scan of thorax, USG and CT scan of abdomen revealed no obvious cystic lesion anywhere. The FNAC diagnosis of primary hydatid cyst of thyroid gland was given.

The patient was advised surgical excision of hydatid cyst of thyroid gland. Unfortunately he refused to go through the surgical treatment in spite of repeated counseling.

Discussion

Except the usual location of liver and lung, the hydatid cyst can be found in brain, cavernous sinus, submandibular gland, thyroid gland, heart, pleura, chest wall, retrocrural tissue, kidney, spleen, pancreas, peritoneal cavity, inguinal canal, breast, bone and soft tissue.¹ The location of hydatid cyst specially the primary one in thyroid is unusual. It usually presents with a solitary nodule which may mimic thyroid carcinoma.³

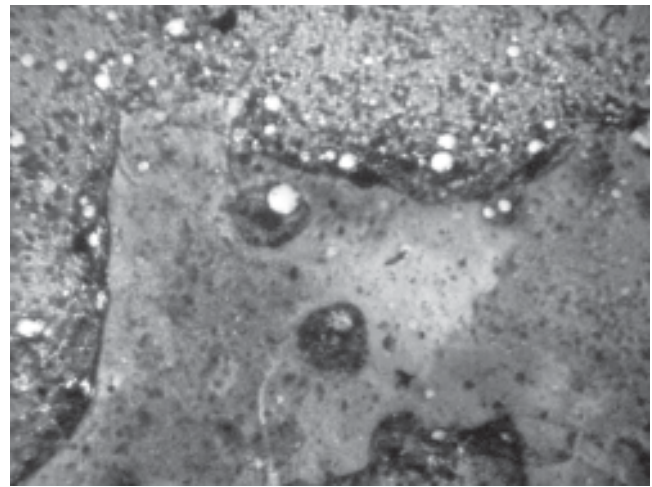


Fig. 4 : Few brood capsules of *Echinococcus* (MGG, x 200).

Interestingly, our case presented with multinodular thyroid swelling. Serious complaints like severe dyspnoea and stridor were also reported in a case of hydatid cyst in thyroid gland which was relieved postoperatively.⁴ In almost all cases, the final diagnosis was made by histopathology following macroscopical examination during surgical excision. However in a retrospective study of 6 cases of primary hydatid cyst of thyroid gland, hydatid origin was suspected in 50% patients preoperatively and immunological tests had 33% false positive rate. The authors opined that the preoperative positive diagnosis could be difficult based on echography and echinococcus immunologic tests.²

The hydatid cyst can be diagnosed preoperatively through FNAC by the demonstration of characteristic findings of fragments of hyaline, laminated cyst wall membrane and confirmatory findings of scolices and hooklets in the smears.⁵ No post-FNAC complication was noted in our case. However probable minimal complication (e.g. mild anaphylaxis) can be managed by appropriate anti-anaphylactics. Surgical extirpation is definitive treatment followed by chemotherapy with benzimidazole derivatives to avoid recurrences.⁶ The mild hypothyroidism seen in our patient was due to replacement of the normal thyroid tissue by multiple cysts.

Conclusion

The earliest confirmatory preoperative diagnosis of hydatid cyst even in exceptional location like thyroid gland is possible by FNAC. The complication can be managed or avoided if we keep the possibility of it in our mind during the FNAC of any cystic lesion of this type. Furthermore, FNAC diagnosis before surgery will help to take necessary anti-anaphylactic measurement and special care to avoid the spread of

protoscolices during surgical excision of the hydatid cyst.

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