HYDATID CYST PRESENTING AS A THYROID NODULE: REPORT OF THREE CASES

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Abstract–Hydatid cyst of the thyroid gland is rare, even in areas where echinococcosis is endemic. We report two cases of hydatid cyst of the thyroid gland and one case of a hydatid cyst in the soft tissues of the neck. In the latter, the cyst was superimposed on the thyroid gland and presented as a thyroid nodule. In one patient, fine needle aspiration biopsy produced severe anaphylaxis. In view of the rare occurrence of hydatid disease of the thyroid gland, fine needle aspiration biopsy of thyroid nodules can be performed routinely in areas endemic for echinococcosis but should be avoided if hydatid disease is strongly suspected.

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Key words: hydatid disease; fine needle aspiration biopsy; thyroid nodule; anaphylaxis

INTRODUCTION

Hydatid cyst of thyroid gland is rare, even in the areas where echinococcosis is endemic (1). Hydatid disease can present as a thyroid nodule, and if aspirated for cytologic examination, anaphylactic reaction may occur. Because fine needle aspiration (FNA) biopsy of thyroid nodules is performed routinely, hydatid-cyst case reports of thyroid gland are of clinical interest. In this study, we report three cases of hydatid disease presenting as a thyroid nodule.

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CASE REPORT

Between 1970 and 1987, two cases of hydatid cyst presenting as a thyroid nodule were observed in Shariati Hospital[a]. Review of surgical registry and medical records of the endocrine clinics did not reveal any other cases. The third case in this report was the only hydatid cyst of the thyroid gland observed during the same period at Mashhad University Hospital.

Hydatid cysts observed at Tehran University between 1944 and 1968 were reviewed. In two cases, the cyst was in the thyroid gland, and in one case, it was superimposed on the gland. Because in the latter the cyst could not be clinically distinguished from a thyroid nodule, FNA biopsy was performed. The biopsy produced a severe anaphylactic reaction

Case one

A 16-year-old housewife in the first trimester of pregnancy was admitted to the hospital in Mashhad, because of a lump in her neck. A 4×5-cm soft nodule was found in the right lobe of the thyroid gland. The results of thyroid function tests were normal. Surgical treatment was deferred because of pregnancy, but 3 months after an uneventful delivery, she was readmitted to the hospital. The nodule measured 5×7 cm. The results of physical examination and chest radiography were otherwise normal. A right thyroid lobectomy confirmed the presence of a hydatid cyst in the thyroid gland.

[a] Shariaty Hospital is a large university hospital and a referral center for thyroid disease. The referrals are mostly from Tehran Metropolitan area and the central and northeastern parts of Iran.

Case two

A 24-year-old housewife from a rural area of central Iran was admitted to Shariati Hospital in Tehran because of a nodule in the right lobe of the thyroid gland. On physical examination, a soft, mobile, 4×3-cm nodule in the right lobe of the gland, and a 3×3-cm subcutaneous mass over the lower thorax on the left midaxillary line were found. The results of thyroid function tests were normal. Radioisotope thyroid scanning revealed a cold nodule, and ultrasonography showed a 4×3-cm cyst that corresponded to this nodule. Chest radiography demonstrated multiple round opacities in both lung fields that were consistent with hydatid disease. Computed tomography of the abdomen showed multiple cystic lesions in the liver. At operation, a hydatid cyst of the thyroid gland and a subcutaneous hydatid cyst of the left lower thoracic area were removed (Fig. 1). Postoperatively, the patient received long-term treatment with mebenazole. Cough and dyspnea developed 6 months later, and her sputum was positive for echinococcosis, indicating spontaneous rupture of a hydatid cyst in the lung.

Case three

A 60-year-old woman from Northwestern Iran was seen in the thyroid clinic of Shariati Hospital. She complained about a mass in the left side of her neck. On examination, a 6×7-cm mass was palpated in the left thyroid lobe. Technetium-99m scan of the thyroid gland revealed a cold area in the left lobe. Fine needle aspiration biopsy was performed with a 24-gauge needle and 5 ml of clear watery fluid was obtained for diagnostic purposes. The patient immediately began to have respiratory wheezes, severe dyspnea, hypotension, and urticaria. She was treated with antihistamines and glucocorticoids administered intravenously. Her clinical condition improved, but localized swelling, induration, and erythema over the left neck persisted for 48 hours. Examination of the aspirated fluid showed scoleces of echinococcus granulosus. Chest radiographs and computed tomographic scans of the abdomen were reported as normal. Exploration of the neck revealed an 8-cm hydatid cyst of the soft tissue that displaced the left lobe of the thyroid gland superiorly and medially. The cyst was extrathyroidal. Although there were adhesions

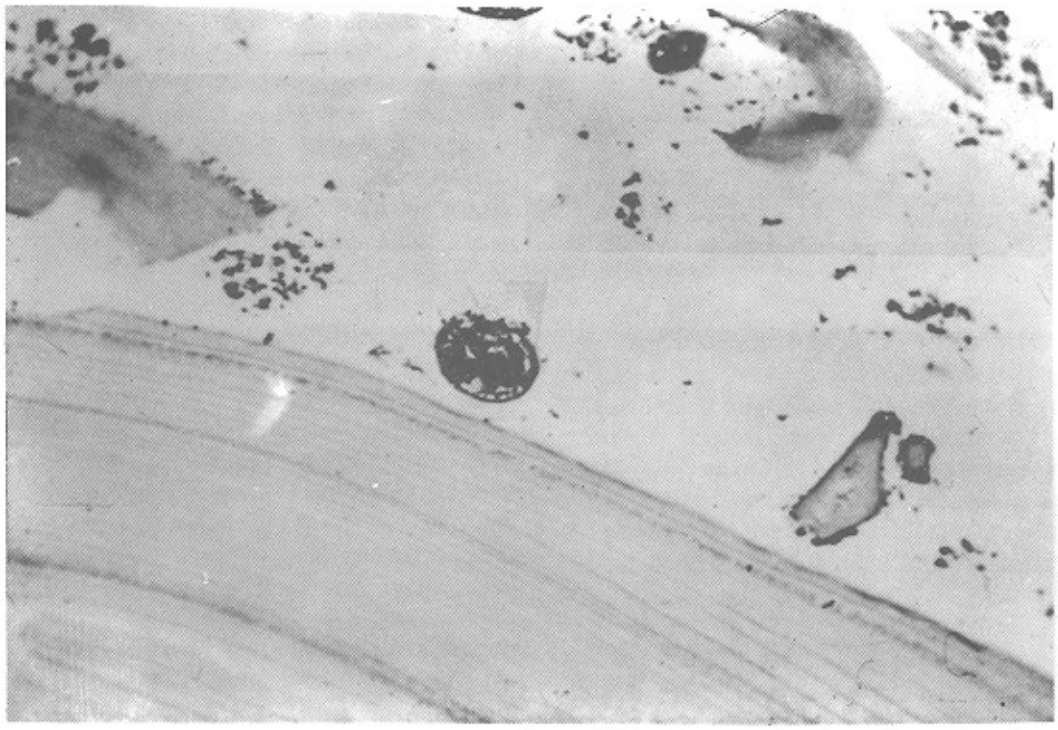

Fig. 1. Microscopic view of the inner germinal layer of the hydatid cyst in case 2, showing scoleces and particles of the daughter cyst.

to the thyroid capsule, the thyroid gland was not involved, and only the cyst was excised.

DISCUSSION

Hydatid disease is common in Iran. The liver and lungs are involved most frequently. Involvement of the spleen, kidney, peritoneum, and intracranial contents is not uncommon (1, 2). Involvement of the thyroid gland is unusual. In a report of 1,950 cases operated on in Tehran, Azizi (2) found only two cases of hydatid disease in the gland. Vakili and Nafissi (3) reported another case of isolated echinococcosis of the thyroid. However, reports of hydatid disease from central (4) and southwestern (1) parts of Iran did not include any cases where this gland was involved. Cases reported from Tasmania (5), Australia (6), India (7,8), France (9), Italy (10), Eastern Europe (11,12), South America (13), Iraq (14), Morocco (15,16,17), Germany (18), Turkey (19), Tunis (20), and South Africa (21) included isolated thyroid gland involvement as well as multiple organ disease (10,14). Hydatid cysts of soft tissues of the neck and salivary glands have also been reported (16,17). Until 1976, only 150 cases of hydatid disease of thyroid gland had been reported. Twenty-three other cases have been reported since 1976. Thus, with 2 cases reported in this study, we presently know of 175 cases of hydatid disease related to the thyroid gland.

The hydatid cyst contains highly immunogenic foreign substances. Thus, percutaneous aspiration is usually contraindicated because of the spillage possibility of the contents and spread of the disease and the danger of anaphylactic reaction. Anaphylactic shock after spontaneous rupture of a hydatid cyst in the liver has been reported (22). It is likely that leakage after FNA biopsy may also cause anaphylaxis. Fine needle aspirations of the hydatid cyst of the thyroid gland have been uneventful in three reported cases, (15,16) and some authors have recommended FNA biopsy for preoperative diagnosis (16). However, our experience with anaphylaxis developing in a patient after FNA biopsy showed this procedure to be hazardous . In a similar case report (24), an anaphylactic reaction, including urticaria and bronchospasm, was observed following aspiration of 30 ml of fluid from a hydatid cyst in the thyroid gland. Thus, we believe that FNA biopsy should be avoided if hydatid disease of the thyroid gland is suspected. However, we do not believe that FNA biopsy of the thyroid nodule or cyst should be systematically avoided in areas endemic for echinococcosis. The possibility of hydatid disease in a thyroid cyst is less than 1% in endemic areas and non-existent in nonendemic areas. On the other hand, thyroid cysts of various cases are common and 19% of thyroid nodules are cystic (23). Only 0.2% of nodules operated on in endemic areas have been reported to be of echinococcal origin (10).

CONCLUSION

Fine needle aspiration biopsy of thyroid nodules for diagnostic purposes can be performed routinely and safely in endemic areas because the probability of encountering a hydatid cyst is extremely low. However, the procedure should be avoided in patients known to have hydatid disease. Also, if a clear watery fluid is withdrawn from a cyst in patients from endemic areas, the patients should be kept under observation for anaphylaxis and the cystic fluid should be examined for evidence of echinococcosis.

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