



Cholesterol Granuloma of Thyroid Gland Without Altered Lipid Metabolism- A Rare Case Report

KEYWORDS

Cholesterol Granuloma, Subacute Thyroiditis, Thyroid Gland, Fine Needle Aspiration Cytology

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ABSTRACT *This report describes a cholesterol granuloma of thyroid gland in a 55 year old female who had long standing case of subacute thyroiditis for 12 years. She had no symptoms except for a palpable mass which was non painful. Fine needle aspiration cytology (FNAC) was performed in the patient for diagnosis*

Introduction

Cholesterol granuloma of the thyroid gland is a very rare case. Till date only two cases of Cholesterol Granuloma of the thyroid have so far been reported [1] and [2]. In those cases, the Cholesterol Granuloma of the thyroid was due to an abnormality of lipid metabolism, called Erdheim-Chester disease (ECD), and the Cholesterol Granuloma of the thyroid was associated with lipoid granuloma that developed in many other organs. One case of Cholesterol granuloma of the thyroid not accompanied by Erdheim Chester Disease has been reported [3]. In this report we present another case of Cholesterol Granuloma of the thyroid not accompanied by Erdheim Chester Disease. Erdheim-Chester disease (also known as Erdheim-Chester syndrome or polyostotic sclerosing histiocytosis) is a rare disease characterized by the abnormal multiplication of a specific type of white blood cells called histiocytes, or tissue macrophages (technically, this disease is termed a non-Langerhans-cell histiocytosis). Usually, onset is in middle age. The disease involves an infiltration of lipid-laden macrophages, multinucleated giant cells, an inflammatory infiltrate of lymphocytes and histiocytes in the bone marrow, and a generalized sclerosis of the long bones.[4]

Case report

A 55 year old female presented in the outpatient department (OPD) of our centre with complaints of a mass in the midline of neck which was non tender and gradually progressive in nature. The patient also had a history of subacute thyroiditis since 12 years. She was then referred to the Cytopathology Section of Department Of Pathology for further investigation. The mass was 5x 4 cms in dimensions, soft- cystic at some points and firm at other (Fig. no.1& 2). It was well defined and moved with deglutition. The patient did not complain of any dysphagia or compressive symptoms caused by it. Her USG findings revealed an enlarged thyroid mass which involved the whole thyroid gland, more towards the right side. There were also some cystic and calcified areas seen. Her CBC reports and thyroid function tests were within normal range. Further investigations were done which showed normal triglycerides, HDL and LDL level. The cholesterol levels were also within normal range. Informed consent was taken from the patient and FNAC was performed on her.

Materials and Methods-

FNAC was performed on the patient using 22-23 gauge needle attached with 20 ml syringe. Minimum 2-3 passes were made in the swelling at 2 different sites, one at the right lobe which was soft-cystic in consistency from which 10 ml material was aspirated that was creamish white in colour and the other at the left lobe with firm consistency. Aspirated material from both sites were smeared into 3-4 slides and air dried. After staining the slides with May Grunwald Giemsa(MGG) stain dibutyl phthalate xylene (DPX) mountant was used and using a coverslip the slides were prepared for review by experienced cytopathologists.

Results-

FNAC from right lobe of thyroid- The aspirated material was 10 ml creamish white fluid. Prepared smears showed necrotic material with plenty of cholesterol crystals in the background. No follicular cells were seen. **Fig no. 3& 4.**

FNAC from left lobe of thyroid- On microscopic examination there were few follicular cells seen with changes in nuclear/cytoplasmic ratio, open chromatin giving suspicion of follicular neoplasm..

Discussion-

Cholesterol Granuloma occurs most commonly in the middle ear [5] and it is also found in many other organs, such as paranasal sinuses [6] and breast [7]. However, there have been only two cases of CG of the thyroid [1] and [2]. In those cases, the CG occurred with Erdheim Chester Disease and found in not only thyroid but also many other organs at the same time. In this report we present a second case of cholesterol granuloma of thyroid without erdheim chester disease. First was reported by Kenji Noda et al in 2005[3]. Pathologically, Cholesterol Granuloma shows fibrous granulation tissue, containing many cholesterol crystals and surrounded by foreign body giant cells [7]. In the paranasal sinuses, the Cholesterol Granuloma was reported to be caused by a disturbance of air drainage as observed in the middle ear and was treated with radical surgery via using an endoscopic approach [5]. The pathogenesis of cholesterol granuloma in the middle ear reported to cause obstruction of the air cells leading to rupture of blood vessels and haemorrhages. The red cells con-

secutively degenerated into cholesterol clefts producing a foreign body giant cell reaction with accumulation of typical brownish glistening fluid. The treatment of cholesterol granuloma in the middle ear requires chronic drainage into another air-containing cavity [5]. Cholesterol granuloma of the middle ear and paranasal sinuses also presented with inflammation. Chizu et al. reported a case of breast cholesterol granuloma accompanied by cancer. It should be emphasized that a surgical biopsy and a histological examination must be considered when a lesion mimicking cancer is suspected, even if the Fine Needle Aspiration cytology is negative [7]. The relatively non-lysable cholesterol crystals induce a foreign body giant cell reaction that leads to granuloma formation [8]. Cholesterol granuloma in the breast might mimic breast carcinoma. It also reported to cause periductal inflammation leaking into the parenchyma. Biopsy is necessary to for confirmatory diagnosis. In this report we presented a rare case of cholesterol granuloma of the thyroid gland which appeared as a gradually enlarging non painful mass in a 55 year old female which was non painful and did not produce any symptoms. It was difficult to diagnose cholesterol granuloma from malignancy of thyroid gland from just clinical findings. Fine needle aspiration cytology was used as the first line of investigation for its diagnosis which proved to be very helpful in its diagnosis. Although, surgical excision of the gland and it's hitopathological examination is mandatory for confirmatory diagnosis.

Conclusion-

FNAC is a rapid, simple, cost effective outpatient procedure which helps in the early diagnosis of benign as well as malignant lesions and differentiating between them which is not possible with reference to clinical presentation and symptoms only.

Figures-



Fig no.1 A 55 Year Old Female With Thyroid Mass A-P View.



Fig no.2 A 55 Year Old Female With Thyroid Mass Lateral View.

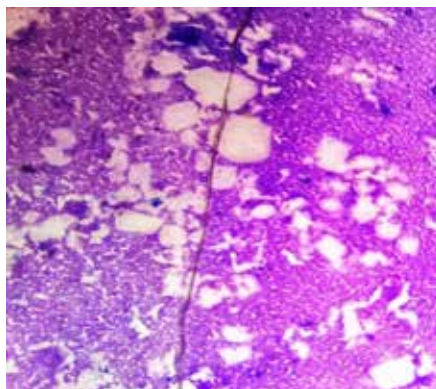


Fig No. 3 Pictomicrograph Showing Cholesterol Crystals Against Necrotic Background With Focal Areas Of Calcification. 10x

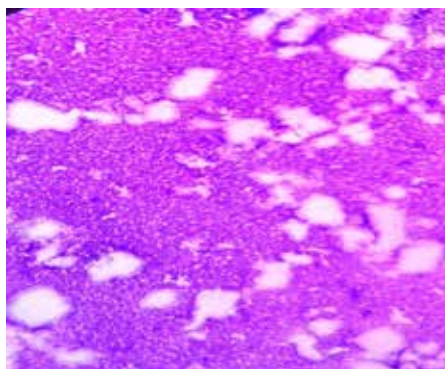


Fig No. 4 Pictomicrograph Showing Cholesterol Crystals 10x

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