

Microfilariae in Thyroid Aspirate –An Incidental Finding



Medical Science

KEYWORDS : microfilaria; fine needle aspiration cytology; thyroid gland.

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ABSTRACT

Involvement of thyroid gland by microfilaria is an unusual and rare finding. Most cases of microfilaria diagnosed by fine needle aspiration cytology (FNAC) are clinically unanticipated. FNAC is simple and extremely useful in diagnosing microfilaria and its value in asymptomatic and clinically unsuspected cases is well documented in literature. We report a case of incidental finding of microfilaria in the thyroid aspirates of a 27years old asymptomatic male patient.

Introduction

Filariasis is a major public health problem in tropical countries, including India. An estimated 500 million people are at risk of lymphatic filariasis infection in 250 districts in India¹. There are at least 8 species of filarial parasites that are specific to man out of which three worms are responsible for lymphatic filariasis¹. The microfilaria of *W. bancrofti* and *B. Malayi* occurring in India display a nocturnal periodicity i.e., they appear in large numbers at night and retreat from blood stream during the day and because of this it's very difficult to find them in blood and fine needle aspirates.

Case Report

A 27-year- old male presented in the ENT outpatient department with a history of midline neck swelling since one month . On local examination a soft to firm, non-tender swelling measuring 6cms x 4cms in size & moving with deglutition was noted (Fig.1). Thyroid function tests were within normal limits. Ultra sound neck revealed a complex mass in the left lobe of thyroid Gland. The blood count showed leukocytosis with a total count of 15,000/cumm & the differential count (DLC) showed 23% Eosinophils.

Fine needle aspiration cytology performed yielded brown colored fluid, which was centrifuged & smears were made. These smears were wet fixed immediately in ether-alcohol mixture and stained by papanicolaou and hematoxylin and eosin stain. Air dried smears were stained by Giemsa. Microscopic examination revealed microfilariae of *Wuchereria bancrofti* along with mono-layered sheets of benign thyroid follicular cells, cystic macrophages, against a background of colloid admixed with blood (Fig.2-4).

Fig.1. Photo showing enlargement of left lobe of thyroid gland.



Fig.2. FNAC smear shows sheathed Microfilariae of *W. bancrofti* (Pap, X40).

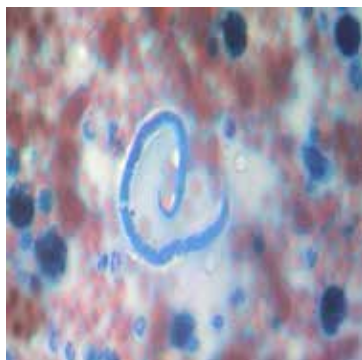


Fig.3. FNAC smear shows sheathed Microfilariae of *W. bancrofti* & cyst macrophages (Pap, X40).

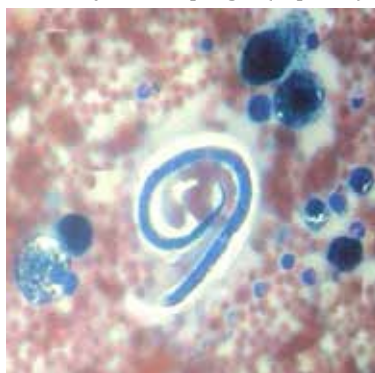
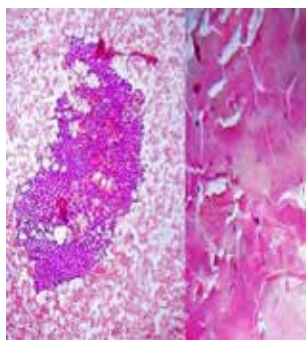


Fig.4. FNAC smear of thyroid aspirate showing thyroid follicular cells & colloid mixed with blood (H&E, X10).



Discussion

Filariasis is a global problem & it is estimated that about 600 million people are living in areas endemic for lymphatic filariasis in Southeast Asia¹. Filariasis is a disease transmitted by the *Culex* mosquitoes¹. It mainly involves the lymphatics of lower limbs, retroperitoneal tissues, spermatic cord, epididymis & mammary gland. There are also reports stating the presence of microfilaria in, sputum, lymphnode, peritoneal, pleural & pericardial fluid, urine, cervicovaginal smears, bronchial, laryngeal brushings, bone marrow, ovarian cyst fluid and in thyroid aspirates^{2,3,4,5,6,7,8,9,10}.

The presence of microfilariae in a thyroid aspirate is an uncommon finding and has been reported in thyroid FNAC. Majority of infected individuals are asymptomatic^{4,8}, as in our case. Based on the characteristic features of *Wuchereria bancrofti* i.e. the sheath is longer than body and tail tip is free of nuclei, the microfilarial larvae identified in our case were labeled as *Microfilaria bancrofti*. The surrounding gland showed clusters of thyroid follicular cells, cyst macrophages against a background of colloid which were also noted by many authors in their studies^{2,3,4,5}. It is postulated that the larvae must have reached the

thyroid via blood circulation. A possible rupture of the vessels may have led to hemorrhage & the release of the microfilariae in the gland^{5,6,10}. On blood smear examination only eosinophilia^{2,3,4,10} was present without any microfilaremia. This finding is consistent with observation made by other authors, who reported that filariasis can exist without microfilaremia^{4,5}.

In India, where the incidence of filariasis is high, finding microfilaria in fine needle aspirate is not uncommon and is usually due to larval form of parasites. FNAC is safe, inexpensive and less invasive diagnostic modality. Hence the demonstration of microfilaria in thyroid aspirates helps in early institution of specific treatment and prevents further severe manifestations of filariasis and can avoid unnecessary surgeries.

Conclusion

The detection of a microfilaria in the thyroid aspirate was an incidental finding, but it helped in preventing further progress of the disease. As in our case the patient was treated with diethyl-carbamazine & after follow up the swelling was reduced in size. The careful screening of FNA smears will help in early detection of microfilaria in asymptomatic patients.

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