



Microfilaria in Thyroid Fine –Needle Aspiration cytology : A Rare Case Report

Dr Arshad Ikram¹, Dr Aparna Singh², Dr Stuti Bhuvan³

¹Professor & HOD, Department of Pathology, Prasad Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

²Associate Professor, Department of Pathology, Prasad Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

³Associate Professor, Department of Pathology, Prasad Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

Corresponding Author

Dr Arshad Ikram

Professor & HOD, Department of Pathology, Prasad Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

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Abstract

Filariasis is a global health problem particularly in tropical countries like India. About 90% of cases of lymphatic filariasis are caused by infection with *Wuchereria bancrofti* and rest by *Brugia malayi* in Southeast Asia. Filariasis is transmitted by the bite of *Culex* mosquitoes. The diagnosis of it is conventionally made by demonstrating microfilaria in the peripheral blood smear. Increasingly, these larvae are discovered incidentally during fine-needle aspiration cytology (FNAC) at various anatomical sites; however, their documentation within **thyroid nodules** remains exceedingly rare. This report details an unusual clinical presentation where routine thyroid nodule aspiration unexpectedly revealed the presence of microfilariae.

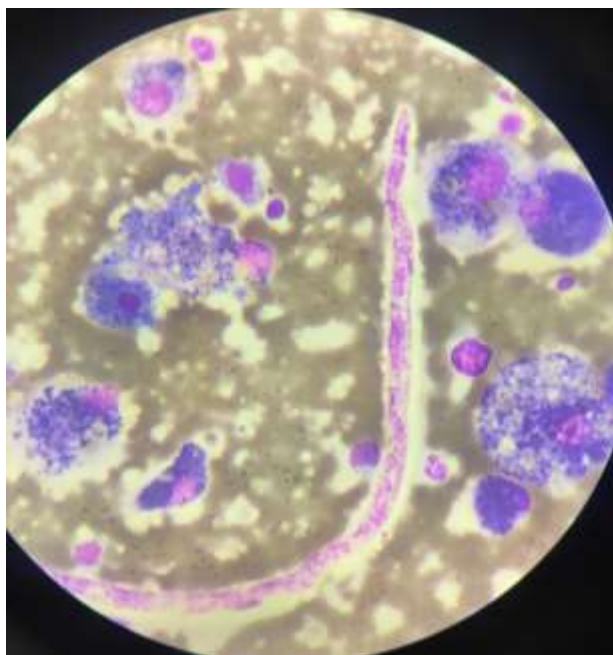
Keywords: Microfilaria, Thyroid, Aspiration cytology, lymphatic filariasis.

CASEREPORT

A 30-year-old female visited ENT OPD with the complaint of anterior neck swelling for 7 days. On local examination, a 5 cm × 4 cm, soft to firm, non tender swelling which moved with deglutition was noted on the right lobe of her thyroid gland. Ultrasonography was advised and it revealed bulky right lobe of thyroid with a well defined iso to hyperechoic solid cystic lesion measuring 2.24 x 3.70 x 2.54 cm (TIRADS IV A). Fine needle aspiration cytology was suggested and the same was performed under USG guidance. Approximately 8 ml haemorrhagic cystic fluid aspirated. Slides were prepared and stained with Giemsa, H&E, Papanicolaou & leishman stain. Smears revealed sheathed microfilariae, few follicular cells and numerous cyst macrophages against a haemorrhagic background. Her Thyroid function test was within normal limits. CBC showed hemoglobin of 12.2 g/dl (normal – 13–17 g/dl). Total leukocyte count was high 8,510/μl and the differential leukocyte count showed eosinophil count 22%. Absolute eosinophil count was 2300/μl. Peripheral smears showed Eosinophilia, however it was negative for microfilaria.



Microfilaria (Giemsa stain 40 X)



Microfilaria (Leishman stain 100 X)

DISCUSSION

Lymphatic filariasis is a global problem. It is a major social and economic scourge in the tropics and subtropics of Africa, Asia, Western Pacific and parts of America affecting over 47 countries. More than 863 million people live in areas where there is risk of infection, of whom 120 million are infected and in need of treatment including 40 million people with overt disease. This includes 15 million people with lymphoedema and 25 million men with urogenital swelling principally scrotal hydrocele. At least 36 million people remain with these chronic disease manifestations. The disease is endemic all over India with heavily infected areas are found in Uttar Pradesh, Bihar, Jharkhand, Andhra Pradesh, Odisha, Telangana, Maharashtra and West Bengal. About 90% of cases of lymphatic Filariasis are caused by infection with *W. Bancrofti*; other related parasites that infect humans are *Brugia malayi* in South-East Asia and *B. timori* in Indonesia[1].

A majority of infected individuals in filarial endemic communities are asymptomatic[2]. While the lymphatic system is the classical site of involvement, microfilariae have occasionally been reported in aspirates from diverse anatomical locations. D Gupta et al conducted a study where they found 12 cases of incidental findings of microfilariae. The cases were diagnosed from lymph node, hand, scrotal area, axilla, breast, subcutaneous tissue, urine, and Pap smear[3]. Similarly S Pal, et al in their study reported 22 cases of incidental finding of microfilaria in cytology smears [5]. Our case is one such rare manifestation of microfilariae in thyroid aspirate. According to some authors, the presence of microfilaria in thyroid aspirate can be explained due to lodging of the parasite in the thyroid microvasculature and subsequent rupture[6]. In our case microfilariae was not demonstrated in the peripheral blood of the patient. Similar observation was found in the report by Gangopadhyay et al. and Richa Bhartiya et al

According to the case reported by **Gangopadhyay et al.**, a female patient presented with a solitary thyroid nodule that clinically and radiologically resembled a tumor. Because she was entirely euthyroid and lacked a suggestive clinical history for parasitic infection, the finding of microfilariae on the thyroid aspirate was purely coincidental[7].

Richa Bhartiya study included 33 cases of incidental microfilarial detection on FNAC. They concluded that incidental detection of microfilariae on FNAC from clinically unsuspected sites remains an important diagnostic finding in endemic regions. Microfilariae may coexist with a broad spectrum of benign, inflammatory, and malignant lesions and frequently occur in the absence of peripheral microfilaremia or eosinophilia. Careful cytological examination allows early diagnosis, facilitates prompt treatment, and aids in the appropriate management of associated pathological conditions[8].

CONCLUSION

Fine Needle Aspiration Cytology (FNAC) provides a rapid, cost-effective, and highly accurate diagnosis of lymphatic filariasis, frequently obviating the need for unnecessary surgical interventions when pharmacological treatment is viable. In endemic regions like India, this parasitic infection must be included in the differential diagnosis of atypical swellings. As demonstrated in this case—where clinical and radiological findings falsely suspected a neoplastic lesion—meticulous screening of cytology smears can isolate microfilariae even in asymptomatic patients, preventing invasive surgery through a simple, low-cost aspirate.

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