

A RARE CASE REPORT OF BREAST FILARIASIS

Bhavani K¹, Roopa Urs A. N², Venkatraman J³, Dhananjay S. Kotasthane⁴

¹Associate Professor, Department of Pathology, Mahatma Gandhi Medical College and Research Institute, Pondicherry.

²Assistant Professor, Department of Pathology, Mahatma Gandhi Medical College and Research Institute, Pondicherry.

³Assistant Professor, Department of Pathology, Mahatma Gandhi Medical College and Research Institute, Pondicherry.

⁴Professor and HOD, Department of Pathology, Mahatma Gandhi Medical College and Research Institute, Pondicherry.

ABSTRACT

BACKGROUND

Lymphatic filariasis is a major public health problem affecting an estimated 120 million people worldwide. India contributes about 40% of the total global burden and accounts for about 50% of the people at risk of infection. *Wuchereria bancrofti* and *Brugia malayi* are the causative parasites for filariasis. It mainly affects lymphatics in lower limbs, retroperitoneal tissues, spermatic cord and epididymis. Breast is an uncommon site of involvement with few cases reported in literature. The demonstration of parasite in Fine Needle Aspirate (FNA) plays a significant role in the preoperative categorisation, diagnosis and treatment of disease.

KEYWORDS

Breast Filariasis, FNA.

HOW TO CITE THIS ARTICLE: Bhavani K, Urs RAN, Venkatraman J, et al. A rare case report of breast filariasis. Journal of Evolution of Research in Pathology and Laboratory Medicine 2017; Vol. 3, Issue 1, Jan-June 2017; Page:14-15

BACKGROUND

Lymphatic filariasis is a major public health problem affecting an estimated 120 million people worldwide.⁽¹⁾ It is an endemic disease in south Asia and Africa.⁽²⁾ In India it is commonly seen in Orissa, Uttar Pradesh, Bihar, Andhra Pradesh, Tamil Nadu and Gujarat.⁽³⁾

Filariasis mainly affects lymphatics in lower limbs, retroperitoneal tissues, spermatic cord and epididymis.⁽⁴⁾ However, breast is an uncommon site of involvement with few cases reported in literature.⁽⁵⁾ Clinically, they present as lymphoedema, elephantiasis and hydrocele.⁽³⁾

Wuchereria bancrofti and *Brugia malayi* are the nematodes, which are primarily responsible for lymphatic filariasis. Despite high incidence of filariasis, microfilaria in Fine Needle Aspiration Cytology (FNAC) is not a very common finding.⁽⁶⁾ The demonstration of parasite in aspirate plays a significant role in the preoperative categorisation, diagnosis and treatment of disease.

Case Report

A 26 yr. old female patient presented with chief complaints of swelling in left breast for the past 1 month associated with pain. On examination, a lump was noted in the upper outer quadrant of left breast measuring 2 × 1 cms and was firm in consistency with mild tenderness. The overlying skin, nipple and areola and contralateral breast appeared normal. No axillary lymph nodes were palpable. Clinical diagnosis was made as fibroadenosis/fibroadenoma.

Ultrasound of breast was done and revealed a well-circumscribed round hypoechoic lesion with smooth

contours measuring 0.9 x 0.5 cm. No necrosis and no increased vascularity was noted. Ultrasound guided FNA was done and sent for cytomorphological analysis to the Department of Pathology. The aspirate was grayish white dirty material. Haematoxylin and Eosin (H and E) were used for staining and FNA smears were done.

On microscopic examination, the smears were composed of mixed population of inflammatory cells composed of polymorphs, lymphocytes and eosinophils with filarial worms in the background of necrotic debris and haemorrhage (Figure 1). The filarial worms were coiled slender structure with a sheath and nuclei throughout the body except in the tail end, which was the typical morphology of microfilaria of *Wuchereria bancrofti* (Figure 2).

Patient's haematological and biochemical investigations were done and were within normal limits. The patient was treated with diethylcarbamazine (DEC) 6 mg/kg/day for 12 days, and was doing well at 6 months followup with no palpable lump or swelling in the same location.

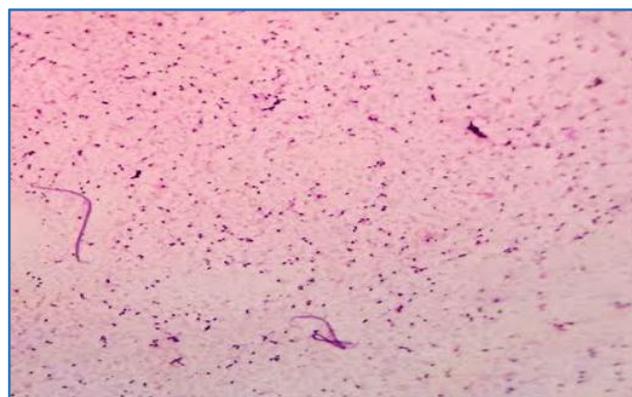


Figure 1. Mixed Population of Inflammatory Cells composed of Polymorphs, Lymphocytes and Eosinophils with Filarial Worms in the Background of Necrotic Debris (H & E, x4)

Financial or Other, Competing Interest: None.

Submission 08-06-2017, Peer Review 12-06-2017,

Acceptance 19-06-2017, Published 30-06-2017.

Corresponding Author:

Dr. Venkatraman J,

Assistant Professor,

Department of Pathology,

Mahatma Gandhi Medical College and

Research Institute,

Pondicherry.

E-mail: drvenkatraman1983@gmail.com





Figure 2. The Filarial Worms were Coiled Slender Structure with a Sheath and Nuclei throughout the Body except in the Tail End (H & E, x10)

DISCUSSION

Filariasis is an endemic disease in India. This was described earlier in ancient history by famous hindu physicians Sushruta and Madhavakara and was referred as elephantiasis.^[4] The only known definitive host of these filarial parasites is man.

They are transmitted to man by the bite of mosquitoes (the intermediate vector), which have bitten an infected host previously. Filariasis affects the lymphatic system with a predilection for lower limbs, retroperitoneal tissues, spermatic cord and epididymis and presents as lymphoedema, elephantiasis and hydrocele. There are about eight filarial species, of which *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori* are the nematodes known to cause lymphatic filariasis.^[4]

Filarial involvement of breast is rare with only a few cases reported in literature. Non-tender soft swelling, commonly seen in upper outer quadrant, but central or periareolar nodules occur with notable frequency. They can be mobile from quadrant to quadrant and mimic fibroadenoma and can be associated with enlarged axillary lymph nodes and simulate breast carcinoma. Overlying skin can have induration, hyperpigmentation, dilated veins or peau d'orange appearance mimicking carcinoma. Kaur et al^[7] reported a case of breast filariasis diagnosed on FNAC mimicking an inflammatory carcinoma along with axillary lymphadenopathy.

However, our case had an upper quadrant breast swelling with no axillary lymph nodes and was diagnosed as benign breast disease. Filarial worms can be detected in breast FNAC. The larvae enter the lymphatic vessels causing lymphangitis.

When the female breast is involved, the larvae enter the lymphatic vessels causing lymphangitis, fibrosis and disruption of lymphatic drainage.^[8] This lymphovascular obstruction leads to extravasation of blood and release of microfilariae into tissues and tissue fluids.

The parasite can be detected by ultrasound and mammography. Ultrasound is a valuable tool in the diagnosing cases of lymphatic filariasis and can even demonstrate the adult worms. A specific distinctive continuous pattern of movement called the 'filarial dance' has been described by ultrasonologists.^[9]

These worms can later calcify and are well-visualised on breast mammograms. The location in the connective tissue not related to the ductal units helps in differentiating the parasite from the calcification seen in breast carcinoma on mammography.^[9] But in our case, there was well-circumscribed hypoechoic lesion with smooth contours with no signs of above described features mimicking fibroadenoma.

In fine needle breast aspirates, intact microfilarial worms can be seen with minimal reaction. But tissue immune response is variable. The degenerating parasite is associated with inflammatory cell infiltration, particularly eosinophils and epithelioid granulomas. Sometimes, accompanying inflammatory changes in overlying skin including oedema of the skin (peau d'orange) and enlargement of axillary lymph nodes make it clinically indistinguishable from carcinoma.^[2,4]

Despite high incidence, it is infrequent to find microfilariae in FNAC smears and body fluids. Thus, demonstration and identification of the parasite in the smear plays a significant role in the prompt recognition of the disease and institution of specific therapy.

Preoperative categorisation of breast lesions is of utmost importance for management of the patient with breast lump and FNAC, a simple, rapid and safe method to diagnose breast lesions, has high sensitivity and specificity.^[6]

CONCLUSION

Filariasis should be considered as one of the differential diagnoses of breast lumps or any superficial swellings in endemic areas. FNAC has to be regarded as safe, best, convenient and effective diagnostic method which provide a definitive diagnosis to clinician in short duration and helps in institution of specific treatment.

REFERENCES

- [1] Anitha K, Shenoy RK. Treatment of lymphatic filariasis: current trends. *Indian Journal of Dermatology, Venereology and Leprology* 2001;67(2):60-5.
- [2] Upadhyaya V, Upadhyaya DN, Sarkar S. An interesting case of breast filariasis. *Indian J Radiol Imaging* 2006;16(4):915-7.
- [3] Bhattacharjee PK, Ray RP, Halder S. Filariasis of breast: an unusual presentation. *Ann Trop Med and Public Health* 2012;5(4):376-8.
- [4] Faust EC, Russell PF, Jung R. Plasmid nematode, parasites of man. Filarioidea. In: Craig and Faust's clinical parasitology. 8th edn. Philadelphia, PA: Lea & Febiger 1970:361-404.
- [5] Pal S, Bose K. Microfilaria in fine needle aspiration cytology of breast lump: an unusual finding. *Journal of Health Specialties* 2015;3(4):235-7.
- [6] Mitra SK, Mishra RK, Verma P. Cytological diagnosis of microfilariae in filariasis endemic areas of eastern Uttar Pradesh. *J Cytol* 2009;26(1):11-14.
- [7] Kaur R, Phillip KJ, Masih K, et al. Filariasis of the breast mimicking inflammatory carcinoma. *Laboratory Medicine* 2009;40(11):683-5.
- [8] Sahai K, Kapila K, Verma K. Parasites in fine needle breast aspirate--assessment of host tissue response. *Postgrad Med J* 2002;78(917):165-7.
- [9] Chow CK, McCarthy JS, Neafie R, et al. Mammography of lymphatic filariases. *Am J Roentgenol* 1996;167:1425-7.