

Breast Filariasis - A Case Report

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Abstract: A 36-year-old married woman with complaints of painful swelling of left breast which was gradually increasing in size for a period of 3 months. Local examination revealed a mobile, firm, tender 9X9 cm lump occupying all the quadrants. Few small nodular lesions were present on the nipple-areola complex and overlying skin was indurated. Ultrasound revealed anechoic cystic dilated ducts with vigorously moving echogenic worm with in it which was highly pathognomonic of dancing filarial sign. In the tropical world, Filariasis is still widespread and is a major public health problem. It accounts for 40% of the prevalence of infection in the world. It commonly affects spermatic cord, epididymis, and lower limbs. The rare site of involvement includes thyroid, skin, and breast.

Keywords: filariasis, breast, lymphatics

1. Introduction

Filariasis is a parasitic disease which is endemic in Asian and African continent. In human, it is caused by *Wuchereria bancrofti* and *Brugia malayi*. Definitive and intermediate host of these parasites are human and *Culex* mosquito respectively. It commonly affects spermatic cord, epididymis, and lower limbs. The rare site of involvement includes thyroid, skin, and breast.

2. Case presentation

A 36-year-old married woman resident of Uttar Pradesh, India came with complaints of painful swelling of left breast which was gradually increasing in size for 3 months. There was a history of fever which was intermittent in nature for 3 months. There was no history of nipple discharge, weight loss, trauma and no family history of breast carcinoma. Local examination (Fig 1.1 and 1.2) revealed a mobile, firm, tender 9X9 cm lump occupying all the quadrants. Few small nodular lesions were present on the nipple-areola complex and overlying skin appear indurated. The right breast was normal. She was referred to USG department.

3. Investigations

Ultrasonography of the breast was done using a high-frequency 7Mhz transducer by using TOSHIBA XARIO machine. Ultrasound revealed anechoic cystic dilated lymphatic ducts with vigorously moving echogenic worm with in it which was highly pathognomonic of “dancing filarial sign” (Fig. 2)



Figure 1.1: shows the swelling in left breast which was mobile, firm and tender. In Fig 1.2 overlying skin appear

indurated with small nodular lesion at nipple areola complex.



Figure 2: Ultrasound showing anechoic cystic dilated lymphatic duct with linear echogenic adult worm with in it which was moving vigorously giving “dancing filarial sign.”
(Click on the link provided below to watch video)
<https://drive.google.com/file/d/1ZzGbgltS9M4jaJ4aPosizsteO7sgPZ7k/view?usp=sharing>

4. Discussion

In the tropical world, Filariasis is still widespread and is a major public health problem. It accounts for 40% of the prevalence of infection in the world. In India, UP, BIHAR, and KERALA are the most affected states. It is caused by nematode of Onchocercidae family, *Wuchereria bancrofti* and *Brugia malayi*.

Filariasis has a very ancient history since elephantiasis has been reported in India by famous Hindu physicians like Susruta and Madhavakara from very early times.

Culex mosquitoes serve as the intermediate vector and spread the disease. They bite on an infected person and ingest the microfilariae. Development of microfilariae happens in the *Culex*. For completion of the development, microfilariae are inoculated back into the human being during feeding.

It starts with occasional febrile episodes which are the reaction of the host's inflammatory response, which causes symptoms and signs associated with the filarial affliction. In

breast filariasis, larva enters the lymphatic vessels causing lymphangitis, fibrosis, and disruption of lymphatic drainage. Unilateral painless solitary nontender breast mass is the most common presentation. The most common site is the upper outer quadrant. Peau d' orange can be seen because of hyperemia in the overlying skin. Enlarged axillary lymph nodes have also been reported in many cases.

Ultrasound is very informative in the diagnosis of cases of lymphatic filariasis. Ultrasound generally shows continuous vigorously moving live worm in a dilated lymphatic duct which is known as "Filarial dance" sign and when seen it gives a confirmatory diagnosis. We were able to demonstrate this sign in our case. Ultrasound generally also shows the presence of the dilated lymphatic system in breast and axilla. Axillary lymphadenopathy is also seen. Occasionally when the patient presents with a tender breast lump, skin thickening with edematous changes in the breast, like increased echogenicity of the fibrofatty and fibroglandular tissue is seen, as in our case.

On mammography, calcified breast filariasis appears as benign groups of elongated and serpiginous calcification with no irregularity with or without lucent centers, located in the connective tissue unrelated to the ducts (distinguishing them from the calcifications of intraductal carcinoma). In our patient mammography could not be done because of the tender breast.

FNAC is very effective in demonstrating the parasite on smear and is helpful in differentiating from a mass lesion in patients those who present with a breast lump.

5. Learning points

This case emphasizes the need to consider the possibility of filariasis in patients presenting with a breast lump in endemic areas and the utility of ultrasound in establishing the diagnosis by demonstration of the characteristic filarial dance sign.

References

- [1] Upadhyaya V, Upadhyaya DN, Sarkar S. An interesting case of breast filariasis. *Indian J Radiol Imag.* 2006;16(4):915–7.
- [2] Sahu KK, Pai P, Raghuvveer CV, Pai RR. Microfilaria in a fine needle aspirate from the salivary gland. *Acta Cytol.* 1997;41(3):954. [PubMed]
- [3] Singh NG, Chatterjee L. Filariasis of the breast, diagnosed by fine needle aspiration cytology. *Ann Saudi Med.* 2009;29(5):414–5. [PMC free article] [PubMed]
- [4] Alkadhi H, Garzoli E. Images in clinical medicine. Calcified filariasis of the breasts. *N Engl J Med.* 2005;352(2):e17991 doi: 10.1056/ENEJMicm040651. [PubMed] [CrossRef]
- [5] Lahiri VL. Microfilariae in nipple secretion. *Acta Cytol.* 1975;19(2):154. [PubMed]
- [6] Amaral F, Dreyer G, Figueredo-Silva J, Noroes J, Cavalcanti A, Samico SC, et al. Live adult worms detected by ultrasonography in human Bancroftian filariasis. *Am J Trop Med Hyg.* 1994;50(6):753–7. [PubMed]
- [7] Dreyer G, Amaral F, Noroes J, Medeiros Z. Ultrasonographic evidence for stability of adult worm location in bancroftian filariasis. *Trans R Soc Trop Med Hyg.* 1994;88(5):558. [PubMed]
- [8] Rathi V, Bhargava SK, Gupta A, Jain S. Filarial dance in a breast mass on colour Doppler imaging. *Australas Radiol.* 2006;50(2):183–5. doi: 10.1111/j.1440-1673.2006.01551.x. [PubMed] [CrossRef]
- [9] Surendrababu NR, Thomas E, Rajinikanth J, Keshava SN. Breast filariasis: real-time sonographic imaging of the filarial dance. *J Clin Ultrasound.* 2008;36(9):567–9. doi: 10.1002/jcu.20418. [PubMed] [CrossRef]

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