*International Journal of TROPICAL DISEASE & Health*

***Volume 45, Issue 11, Page 30-33, 2024; Article no.IJTDH.124938***
***ISSN: 2278–1005, NLM ID: 101632866***

# A Rare Presentation of Breast Filariasis: A Case Report

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***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

***Article Information***

DOI: https://doi.org/10.9734/ijtdh/2024/v45i111602

**Open Peer Review History:**
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/124938

***Case Report***

***Received: 19/08/2024***
***Accepted: 21/10/2024***
***Published: 26/10/2024***

## ABSTRACT

**Background:** Filariasis is a common tropical disease but filariasis in breast is uncommon. Mostly, presentation is with typical symptoms of inflammation and lump. Atypical presentation is very rare and needs to be reported.
**Case Presentation:** We report a case of breast filariasis with its atypical presentation and challenges faced for diagnosis. Patient was successfully treated with DEC (Di-ethyl-carbamazine).
**Conclusion:** A high index of suspicion is required for its diagnosis in endemic zones even with atypical presentation, only then can correct treatment for the disease be given and prevention in progression and spread of disease achieved. This case report urges clinicians to keep a fair degree of clinical suspicion for parasitic infections as a cause of breast lump, especially in endemic countries and when presentation is atypical.

*Keywords: Breast filariasis; tropical disease; filarial breast lump; lymphatic filariasis; rare presentation.*

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***Cite as:*** *Tiwari, Kritika, Garima Chawla, and Mukesh Kumar. 2024. "A Rare Presentation of Breast Filariasis: A Case Report". International Journal of TROPICAL DISEASE & Health 45 (11):30-33. https://doi.org/10.9734/ijtdh/2024/v45i111602.*

## 1. INTRODUCTION

Filariasis is a major public health problem and burden in India (Kaur et al. 2009 and Chakraborty et al. 2019). In India, it is commonly seen in Orissa, Uttar Pradesh, Bihar, Andhra Pradesh, Tamil Nadu, and Gujarat (Bhattacharjee et al. 2012, Barwad et al. 2018). Breast filariasis is an uncommon disease and is mostly associated with involvement of respective axillary lymph nodes (Kaur et al. 2009, Bhattacharjee et al. 2012, Barwad et al. 2018). An isolated subcutaneous filarial breast lump is very rare, and it is hardly reported in the literature. Most of the cases present with painless lump in the breast with axillary nodes. Here, we discuss a case of young female who presented with a single and small painless swelling in the breast and no other complaint. Case was proceeded according to the breast protocol with triple assessment. Only after ruling out malignant and other benign pathologies of breast and confirmation of the microfilaria, patient was treated conservatively.

Lymphatic filariasis is a vector-borne disease caused by nematodes *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*, by *Culex* or *Mansonia* mosquito bite. Humans are the definitive hosts. While acute disease causes fever, chills, lymphangitis, lymphadenopathy and tropical pulmonary eosinophilia, chronic disease usually causes lymphedema of the lower limb and hydrocele. Other uncommon extranodal sites of manifestation include urogenital, renal and breast (Dietrich et al. 2019). Blockage of lymphatics and fibrosis causes filarial granuloma which presents as palpable mass (Bhattacharjee et al. 2012).

## 2. CASE PRESENTATION

Patient X, 22 years old female, resident of Uttar Pradesh, presented to General Surgery OPD at Guru Teg Bahadur Hospital in June 2024 with complaint of single painless lump in right breast for 2 months, approximately 2*2 cm in size, gradually increasing in size. It was not associated with any nipple discharge. There was no history of fever, overlying skin changes, loss of weight, loss of appetite, or tuberculosis contact. She did not have any family history of breast cancer. However, patient's neighbor has history of chronic swelling of left lower limb, likely secondary to lymphatic filariasis. The patient was a non-smoker, non-alcoholic, unmarried, with regular menstrual cycles, and was not on any long-term medication.

On examination, patient was conscious and oriented with stable vitals. General physical examination was unremarkable. On regional examination, inspection was unremarkable. Palpation revealed an ill-defined, non-tender, mobile, soft to firm swelling of size 2*2 cm in the upper outer quadrant of the right breast at 11 o'clock position, 7 cm away from the areolar margin, with no axillary swelling. The left breast and axilla was normal.

Blood work-up was within normal limit including the leucocyte and eosinophil count. In keeping with triple assessment, ultrasound of the breast (Fig. 1) was ordered and it revealed few tubular, anechoic structures at the site of complaint with characteristic dancing spree movement within one of them, suggesting the possibility of breast filariasis.

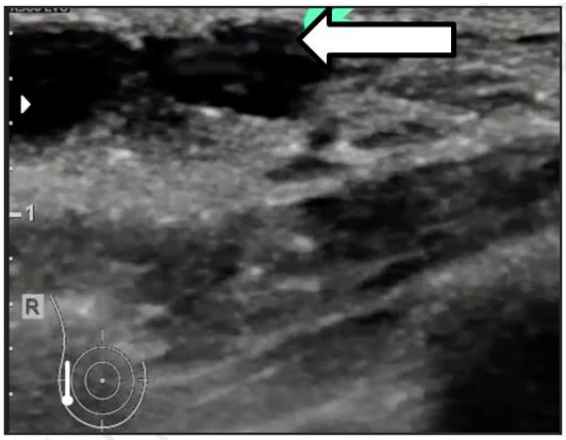


**Fig. 1. Sonographic image of right breast lump showing anechoic cystic lesion(arrow) with an internal hyperechoic linear structure representing the filarial worm, demonstrating vigorous mobility in real-time (Filarial dance sign)**

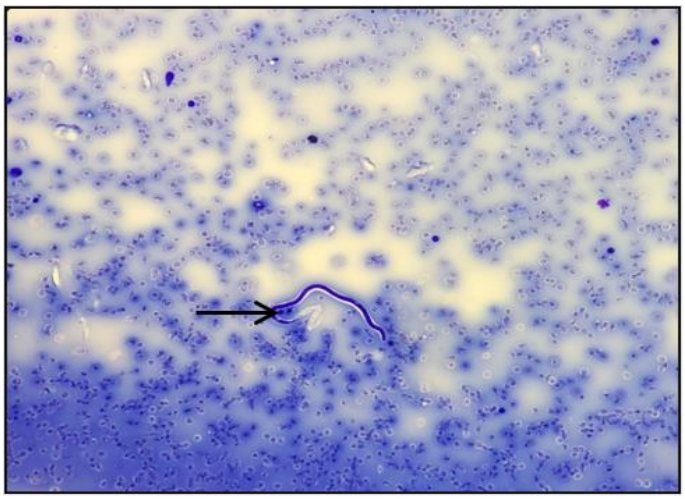

**Fig. 2. FNAC from right breast lump showing microfilaria(arrow) in a background of lymphocytes (May-Grunwald-Giemsa stain X20)**

Fine needle aspiration cytology (Fig. 2) under ultrasound guidance using a 24G needle and 10 cc syringe was performed next, which on May-Grunwald-Giemsa stain revealed multiple microfilaria organisms along with lymphocytes in a fluid background, suggestive of breast filariasis. Patient was further managed medically with tablet DEC (Di-ethyl-carbamazine) given for 12 days. Swelling resolved completely with DEC and patient was followed up for 3 months with no complaint.

## 3. DISCUSSION

Filariasis with extranodal involvement such as breast is a very rare condition and easily treatable with appropriate course of medication. If not diagnosed and treated on time, it may result into widespread disease of the lymphatics which may result into residual symptoms even after the course of medications.

Cases of breast filaria have been reported from the Indian subcontinent and abroad with a variety of clinical manifestations. The most common presentation was a solitary, unilateral, painless breast lump which clinically resembled fibroadenoma, while few reports of multiple lumps with associated fever and episodic erythematous rash have also been published (Barwad et al. 2018 and Khan et al. 2021). Another filarial lump presented as a painful, itchy swelling with tender induration at the site, making chronic mastitis a clinical differential (Sharma et al. 2021). On the other end of the spectrum, obstruction of breast lymphatics can cause lymphangitis and fibrosis, presenting as a hard mass with or without nipple retraction, overlying skin involvement (peau d'orange) or axillary lymphadenopathy, making it difficult to clinically distinguish it from breast malignancy (Kaur et al. 2009 and Deshmukh et al. 2021). However, this case is unusual in context that patient presented only with a painless subcutaneous swelling for 2 months.

Another report from Jharkhand, had incidental finding of filaria in metastatic axillary node after MRM (Modified radical mastectomy) (Chakraborty et al. 2019)

Diagnosis of filariasis is based either on ultrasound imaging by the classic "dancing spree/filarial dance" rigorous movement of the filarial worm in a hypoechoic background lesion or by FNAC from lump or axillary lymph node which may reveal live adult filarial worm, microfilaria, and embryonated eggs of adult gravid female worm with eosinophils and inflammatory infiltrate in the background, with occasional granuloma formation. Thick peripheral blood smears and immunological blood work-up based on polymerase chain reaction can also aid with diagnosis (Bhattacharjee et al. 2012, Barwad et al. 2018 and Mashankar et al. 2005).

The treatment predominantly remains medical therapy with di-ethyl carbamazine (Kaur et al. 2009, Chakraborty et al. 2019, Bhattacharjee et al. 2012, Dietrich et al. 2019 and Park 2010).

Other drugs such as Albendazole and Ivermectin have been recommended in National Filaria Control Programme to achieve elimination of

lymphatic filariasis under National Health Policy 2017, which is successfully being implemented in India (Park 2023).

## 4. CONCLUSION

Breast filariasis is a very rare case found mainly in endemic regions. A high index of suspicion is required for its diagnosis in endemic zones even with atypical presentation, only then can correct treatment for the disease be given. It also helps in preventing progression and spread of the disease, which is a major public health problem. This case report urges clinicians to keep a fair degree of clinical suspicion for parasitic infections as a cause of breast lump, especially in endemic countries and when presentation is atypical.

## DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

## CONSENT

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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*The peer review history for this paper can be accessed here:*
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