Filarial Dance in a Breast Lump

Col R Ravikumar*, Col KK Sen (Retd)⁺, Surg Lt Cdr SN Singh[#], Surg Capt N Chawla^{**}, SR Choudhary⁺⁺, Maj D Singh^{##}

MJAFI 2010; 66 : 193-195

Key Words: Breast; Mammography; Filariasis; Sonomammography

Introduction

Filariasis is a major public health problem in tropical countries. It is endemic in large areas of India, Africa, and Far East [1]. Invasion of breast tissue by filarial worms constitute one of the rarer causes of breast lump and few such cases have been documented [2,3]. Adult worms and microfilaria (MF) should be sought in all unexplained granulomas of the breast [4].

Case Report

A 61 years old woman presented with a palpable lump in right breast which was noticed in breast self examination (BSE) a week ago. It was painless and gradually increasing in size. Clinical examination revealed a single firm lump in lower inner quadrant of right breast, measuring 2 x 1 cm. There was no nipple discharge, breast tenderness and overlying skin was unremarkable. There was no evidence of axillary lymphadenopathy or pedal edema. Clinically a differential diagnosis of carcinoma breast and fibroadenoma were considered.

Mammography of the breast revealed a focal opacity in the inner lower quadrant in the subcutaneous plane of right breast (Figs. 1, 2). Patient underwent sonomammography which revealed an anechoic area, measuring 1.1 x 0.62 cm in inner lower quadrant of right breast between 3 and 4 o'clock position, approximately 5 cm from areolar margin. A curved, tubular slender worm like echogenic structure was seen inside the lesion displaying slow repetitive dancing movements. The entire coiled structure also showed free movements within the cyst. No obvious calcification was seen within the cyst or in its wall. The lesion was found lying in subcutaneous sonolucent fat plane of the breast (Fig. 3). Colour doppler showed significant vascularity within the cyst suggesting chronic inflammatory status (Fig. 4). A diagnosis of live adult filarial parasitic cyst was suggested.

The lump was excised and sent for histopathological examination which showed inflammatory infiltrate surrounding

adult gravid filarial worm (Figs. 5,6).

Discussion

Lymphatic filariasis continues to be a global health problem affecting about an estimated 120 million people with equal sex predilection [2,3]. In spite of the preventive and curative measures adopted by National Filariasis Control Programme (NFCP) it is significantly prevalent in the Indian subcontinent. The filarial survey report of 2002 indicates a staggering 553 million population living in endemic areas in our country [5].

The incidence of mammary filariasis caused most frequently by *Wuchereria bancrofti* is high and has also been reported in the Indian subcontinent [6]. The

Fig. 1: Mammogram craniocaudal (CC) view shows a focal opacity in the inner lower quadrant in the subcutaneous plane of right breast.

Fig. 2 : The mediolateral oblique (MLO) view was unremarkable.

*Senior Advisor (Radiodiagnosis & Interventional Radiology), [#]Graded Specialist (Radiodiagnosis), ^{**}Senior Advisor (Pathology), ⁺⁺Resident (Radiodiagnosis), ^{##}Resident (Pathology), INHS Asvini, Colaba, Mumbai-5. ⁺Professor & HOD (Radiodiagnosis), PSG Institute of Medical Sciences and Research, Coimbatore 641004, Tamil Nadu.

Fig. 3 : Anechoic cyst in fat plane of breast showing a long tubular coiled structure.

Fig. 4 : Colour Doppler shows significant vascularity to the lesion suggestive of inflammatory state.

presentation of breast filariasis is usually unilateral and is usually perceived by the patient as painless solitary lump. The upper outer quadrant is the most common site of involvement [1]. Diagnosis of filariasis is usually made by detection of microfilariae in the patients' peripheral blood smears. Demonstrations of antifilarial antibodies or circulating parasite antigen are often complementary [2].

In a typical case, radiograph mammogram often reveals elongated, serpentine, non-ductal calcifications without evidence of irregularity or pleomorphism. Additional features include areas of residual microcalcification or curvilinear microcalcification within the mass which may suggest degenerating and calcifying worms. Besides *Wuchereria bancrofti*, other parasitic diseases that can cause soft tissue calcifications include cysticercosis, dracunculosis and other filarial infections such as onchocerciasis and loiasis [2].

Mosquito (*Culex fatigans*) bite and deposition of the infective larvae under the skin initiates the disease process in the human. The larvae enter the lymphatic system and later develop into adult worms over a period of six months to two years. Adult worm produces microfilaria, which circulate in the blood stream. Adult

Fig. 5 : H&E stained biopsy section (100x) of the lump removed from the right breast shows intense inflammatory infiltrate surrounding adult gravid filarial worm.

Fig. 6 : H&E stained magnified view (400x) showing microfilariae within the adult gravid filarial worm.

worms in the lymphatic channels produce clinical manifestations of the disease due to lymphatic dysfunction, obstruction and inflammation [2]. The live wriggling adult worms often show rigorous movement in the body, which on real time ultrasound reveals a characteristic appearance described as “filarial dance” [6,7].

While filarial infection of lower limbs, scrotum and retro peritoneum are not uncommon, filariasis presenting primarily as breast lump is a clinical rarity. They are

often diagnosed by fine needle aspiration cytology (FNAC) or by excision biopsy of the lump or the draining axillary lymph nodes [8].

Our case illustrates the utility of real time sonographic demonstration of parasitic movements ("filarial dance") in addition to the morphologic features in the definitive imaging diagnosis of filariasis in the absence of clinical suspicion especially in the absence of characteristic serpentine calcification on film mammograms. It is not uncommon to pick up parasitic lesions by imaging in service population where there is movement, higher literacy level and easy access to health care facility.

Conflicts of Interest

None identified

References

1. Rosen PP. Specific infections. In: Rosen PP. Breast Pathology. 2nd ed. Philadelphia: Lippincott Williams and Wilkins 2001; 65-75.
2. Chow CK, McCarthy J, Neafie R. Mammography of lymphatic filariases. Am J Roentgenol 1996; 167:1425-7.
3. Friedman PD, Kalisher L. Case 43: Filariasis. Radiology 2002; 222:515-7.
4. Jungmann P, Figueredo-Silva J, Dreyer G. Bancroftian lymphangitis in northeastern Brazil: A histopathological study of 17 cases. J Trop Med Hyg 1992; 95:114-8.
5. Pani SP, Reddy S, Das LK, Vanamail P, Hoti SL, Ramesh J, Das PK. Tolerability and efficacy of single dose albendazole, diethylcarbamazine citrate (DEC) or co-administration of albendazole with DEC in the clearance of Wuchereria bancrofti in asymptomatic microfilaraemic volunteers in Pondicherry, South India: a hospital-based study Filaria Journal 2002 1:1doi:10.1186/1475-2883-1-1.
6. Patil JA, Patil AD, Ramani SK. Filarial "Dance" in breast mass. Am J Roentgenol 2003;181:1157-8.
7. Mashankar A, Khopkar K, Parihar A, Salkade P. Breast filariasis. Indian J Radiol Imaging 2005; 15:203-4.
8. Kapila K, Verma K. Diagnosis of parasites in fine needle breast aspirates. Acta Cytol. 1996; 40:653-6.

ATTENTION SUBSCRIBERS

Subscription rates for MJAFI are :-

(i) Serving AMC/AD Corps officers
(through AFMS(O))	- Rs. 300/- per year
(ii) Life Membership (for retiring officers)	- Rs. 1500/-
(iii) Annual subscription
(Individual)	- Rs. 300/-
(iv) Annual subscription
(Institutional)	- Rs. 500/-
(v) Annual subscription
(Foreign countries)	- US \$ 120/-

- Note
1. Please make your cheques or bank drafts in favour of Medical Journal Armed Forces India, payable at Pune. For outstation cheques add Rs. 40/- as bank commission.
 2. Intimate non-receipt of issue within three months from the month of publication.