Adult filarial worm from the breast aspirate of a young man

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Abstract Microfilariae and adult filarial worm have been incidentally detected in fine needle aspirates of various lesions in clinically unsuspected cases. Here we report a male patient who presented with a tender breast nodule and single enlarged lymph node. Fine Needle Aspiration (FNA) yielded 1 ml of yellow coloured fluid and single thread like worm measuring 6×0.2 cm. A diagnosis of breast abscess with a worm morphologically consistent with filariasis was offered. A follow up visit after 2 months showed regression of the breast lesion and the lymph node. Filariasis of the breast is an uncommon condition and can cause a diagnostic dilemma at times. FNA cytology appears to be a more convenient and effective diagnostic tool in patients with mass lesions. Demonstration and identification of the parasite in smears helps in avoiding surgical excision and early institution of prompt therapy especially in young patients.

Keywords Breast · Adult · Filarial worm · FNA

Introduction

Filariasis is a tropical disease transmitted by the culex mosquitoes. *Wuchereria bancrofti* accounts for more than 90 % of the cases of the world followed by *Brugia malayi* and *Brugia timori*. The adult *W. Bancrofti* may produce

lesions in various sites by affecting the lymphatics of the lower limbs, spermatic cord, epididymis, testis, retroperitoneum and female breast. The diagnosis of it is conventionally made by demonstrating microfilariae in the peripheral blood smear. However, microfilariae and adult filarial worm have been incidentally detected in fine needle aspirates of various lesions in clinically unsuspected cases. Here we report a male patient who presented with a tender breast nodule and single enlarged lymph node.

Case report

A 27 year old male presented with a nodule in the breast for the past 3 months and recent onset of pain. On examination a discrete lump measuring 3×2 cm was felt in the inner quadrant of the left breast. Examination of the left axilla revealed a solitary enlarged node. Ultrasonography of left breast mass showed a mass lesion with well defined cystic component and lenear echo (Fig. 1). FNA performed using 10 cc disposable syringe and 23G needle yielded 1 ml of yellow coloured fluid and single thread like worm measuring 6×0.2 cm (Fig. 2a). Smears were stained by Papanicolaou and Leishman's stain. Microscopic examination revealed dense inflammation comprising of neutrophils and an adult worm. The closer examination of the worm revealed thick smooth sheath, simple mouth and abrupt rounded tail without any spines (Fig. 2b, c). Coiled larvae and embryonated eggs were seen within the gravid uteri (Fig. 2d). A diagnosis of breast abscess with a worm morphologically consistent with filariasis was offered. A peripheral smear performed later did not reveal any microfilariae. He was put on Diethylcarbamazine. A follow up visit after 2 months showed regression of the breast lesion and the lymph node.

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Fig. 1 Ultrasonological image showing a cystic mass with a lenear shadow

Discussion

Extranodal filariasis is a rare entity and the breast is an uncommon site for filariasis. When the breast is involved, the larvae enter the lymphatic vessels causing

lymphangitis, fibrosis and disruption of lymphatic drainage (Alkadhi and Gazoli 1987). The patient usually presents with a unilateral painless solitary non-tender breast mass. The most common site is the upper outer quadrant. Hyperemia in the overlying skin with changes of peau d' orange and enlargement of axillary nodes has also been reported (Lang et al. 1987; Upadhaya et al. 2006).

Tests used for diagnosis include demonstration of microfilariae in the peripheral blood or skin and detection filarial antigens and antibodies. Ultrasound is a valuable tool in the diagnosis of lymphatic filariasis which can pick up typical 'filarial dance' sign of live adult worms (Upadhaya et al. 2006). Although there are reports stating the presence of microfilariae in aspirates of various sites like soft tissue, epididymis, testis etc., reports of adult worms in aspirates are sparse (Kumar et al. 2011).

Kapila and Verma (1989), Azad et al. (2010) reported the presence of adult filarial worms in soft tissue swellings. Chakrabarti et al. (2011), Kaur et al. (2009), Rukmangadha et al. (2006), Kapila and Verma (1996), Naorem (2009) and Sanghamitra et al. (2010) have reported adult filarial worms in breast aspirates. The adult male worms are about 40 mm long and females range between 50 and 100 mm in length. They can be identified by thick cuticle and simple

Fig. 2 a Worm measuring 6×0.2 cms. b Mouth, c tail, d coiled embryos inside the gravid uterus

mouth and a tail. Gravid worms show microfilariae coming out from the paired uteri. Species identification can be done by the larval forms. Smear background can show foreign body reaction & inflammatory cells. Calcified adult worms elicit pronounced inflammatory reaction when compared to live worms. Superadded secondary infection in already compromised lymphatics can cause suppurative inflammation as seen in our patient. The solid tissue reaction due to localized fibroblastic and histiocytic proliferation around degenerated adult worm can mimic a breast neoplasm. Our case is unusual in that the affected patient is a male. All the reported cases are in female breast. The peripheral smear did not reveal any microfilaria which is an usual finding in occult filariasis.

Conclusion

Filariasis of the breast is an uncommon condition and can cause a diagnostic dilemma at times. Hence a high index of suspicion especially in patients from endemic areas is required. FNA cytology appears to be a more convenient and effective diagnostic tool in patients with mass lesions. Demonstration and identification of the parasite in smears helps in avoiding surgical excision and early institution of prompt therapy especially in young patients.

Conflict of interest Nil.

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