Microfilariae of *Wucheria bancrofti* in bone marrow

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To the editor,

We report an incidental finding of microfilariae in the bone marrow aspirate of a patient who was under investigation of back pain with destruction of first lumbar vertebrae. Filariasis is a major health problem in tropical countries including India. Filaria is a nematode belonging to the order spirurida and superfamily filariorida [1]. Microfilariae may inhabit the blood vessels, lymphatic system, connective tissue and serous cavities of man and animals.

A 55-year-old female, resident of village Lakhimpur, District- Budayun of Uttar Pradesh, presented with lower backache for 1 yr. On examination tenderness was found at 1st and 2nd lumbar vertebral region. Radiographs showed destruction of first lumbar vertebrae. The differential diagnosis of tuberculosis spine, metastasis to spine and multiple myeloma were put forth.

To rule out these, a bone marrow aspiration was done and it was sent to pathology department for evaluation. Routine hematological investigation was within normal range. On peripheral smear the red cells were normocytic and normochromic. Platelets were adequate. No hemoparasite or immature cells were noted in the smear. Bone marrow showed contamination with peripheral blood. The red cell precursors showed normoblastic reaction. Myeloid to erythroid ratio and myelopoiesis was normal. Megakaryocytes also showed a normal picture. There was increase in

plasma cell population. They comprised 14% of the marrow cellularity. A small group of metastatic columnar cells (glandular origin) were seen (Fig. 1). They were supposed to be of metastatic tumor origin. One of the submitted smears showed microfilariae of *Wucheria bancrofti* (Fig. 2). Based on these findings the diagnosis of metastatic lesion of bone with *Wucheria bancrofti* microfilariae was given.

The clinical manifestations of lymphatic filariasis may range from asymptomatic microfilariasis to hydrocele, lymphangitis, lymphadenitis with high grade fever (filarial fever) and lymphatic obstruction. Our patient was clinically asymptomatic. The presence of microfilariae has been documented in the fine needle aspiration cytology of various organs other than lymphoid in past. The first documentation of microfilariae in bone marrow aspirate, available in English literature was by Pradhan et al. [2] in 1976. They showed 7 cases with peripheral

Fig. 1 Bone marrow aspiration smear showing a small group of metastatic columnar cells. (Leishman X 400)

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Fig. 2 Bone marrow aspiration smear showing microfilariae of *Wucheria bancrofti*. (Leishman X 1000)

blood and bone marrow aspirate showing *W. bancrofti*. None of these cases had Aplastic anemia. A finding not seen in our case as well. However many authors [3, 4, 5], have reported the coexistence of microfilariae of *W. bancrofti* and aplastic anemia. Microfilariae of *W. bancrofti* have been found in various cytological smears, including fine needle aspiration cytology, body fluids, vaginal and endometrial smears, laryngeal and pharyngeal brushings, joint aspirates, ovarian cyst, bronchial brushing and also in association with tuberculosis and malignancy [6, 7]. The adult parasite of *W. bancrofti* settles down in lymphatic system and lymph node and produce microfilariae which enters circulation through thoracic duct. During their transit they get lodged in various organs like lymph nodes, lungs, liver, spleen, and similarly bone marrow. Living microfilariae

circulating in blood do not cause any pathological effect except occult filariasis.

Filariasis can be cured by administration of Diethylcarbamazine (DEC). The bone marrow examination of our patient showed the presence of metastatic cells. Apart from DEC she needs the treatment for malignancy. She is being investigated for the primary site as the mode of treatment will vary depending upon the primary site.

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