

Case Report

Mid-arm and epitrochlear lymphadenopathy: a clinico-radiological surprise

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Abstract

An 18-year-old man presented with multiple subcutaneous nodules over the anteromedial aspect of his right lower arm. Based on findings of sonography, histopathology, circulating filarial antigen test, and therapeutic response to diethylcarbazine, a diagnosis of filarial lymphadenopathy affecting mid-arm nodes and epitrochlear lymph nodes was made.

Key words: Bancroftian filariasis; mid-arm lymph nodes; epitrochlear lymph nodes; lymphadenopathy

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Introduction

Lymph nodes in the arm are typically found in the epitrochlear and deltopectoral regions. Descriptions of mid-arm lymph nodes are limited to only a few cases of malignant lymphoma in the literature [1,2]. Though epitrochlear lymph nodes may be enlarged as a part of generalized lymphadenopathy, isolated enlargement of epitrochlear lymph nodes is rarely seen. Cat scratch disease [3], leprosy [4], leishmaniasis [5,6] and tuberculosis [7] are a few reported benign causes of isolated epitrochlear lymph node enlargement; malignant causes include lymphoma and malignant melanoma. To the best of our knowledge, this is the first case report of enlargement of mid-arm lymph nodes along with epitrochlear lymph nodes caused by bancroftian filariasis, a benign disease.

Case report

An 18-year-old male resident of Gorakhpur city, north India, presented with multiple painless subcutaneous nodules over the anteromedial aspect of the right lower arm extending from the cubital fossa to mid arm (Figure 1). These nodules were present for three months and had gradually increased in size. Systemic examination was unremarkable and scrotum examination did not reveal any abnormality. There was no axillary or inguinal lymphadenopathy. On local examination, the nodules were non tender,

discrete, and firm in consistency. There was no distal neurovascular deficit. Ultrasonography with a high-frequency probe (7.5-10 MHz) showed multiple enlarged lymph nodes along the anteromedial aspect of the arm. One of the epitrochlear lymph nodes was hypoechoic, showing a well-defined hilum, and was anteriorly displacing the brachial artery (Figure 2a). Mid-arm lymph nodes appeared conglomerate, irregularly lobulated, and heterogenous in echotexture. The hilum could not be clearly defined in the latter group (Figure 3a). Based on these findings, sonographic suspicion of lymphoma or tuberculosis was made. Excisional biopsy of one of the nodules was performed under local anaesthesia. Histopathological examination showed eosinophilic infiltration of the lymph node with evidence of lymphangiectasia which suggested the possibility of filarial lymphadenopathy (Figure 4). The differential eosinophil count was 30% while absolute eosinophil count was 2450/mm³. Stool examination was unremarkable. Nocturnal venous blood smear examination failed to show microfilaria. The blood tested positive for circulating filarial antigen (ICT card test, BINAX, Inc. Scarborough, ME, USA). The patient was prescribed two weeks of therapy with diethylcarbazine (2mg/kg/day). After two weeks, there was marked reduction in the size of the nodules, which was confirmed on ultrasound (Figures 2b and 3b). A final diagnosis of lymphadenopathy due to

Figure 1. Clinical photograph showing enlarged mid-arm and epitrochlear lymph nodes



Figure 2(a). An oval epitrochlear lymph node with regular margins and a central hilum.
(b) Marked decrease in size of lymph node after treatment with DEC

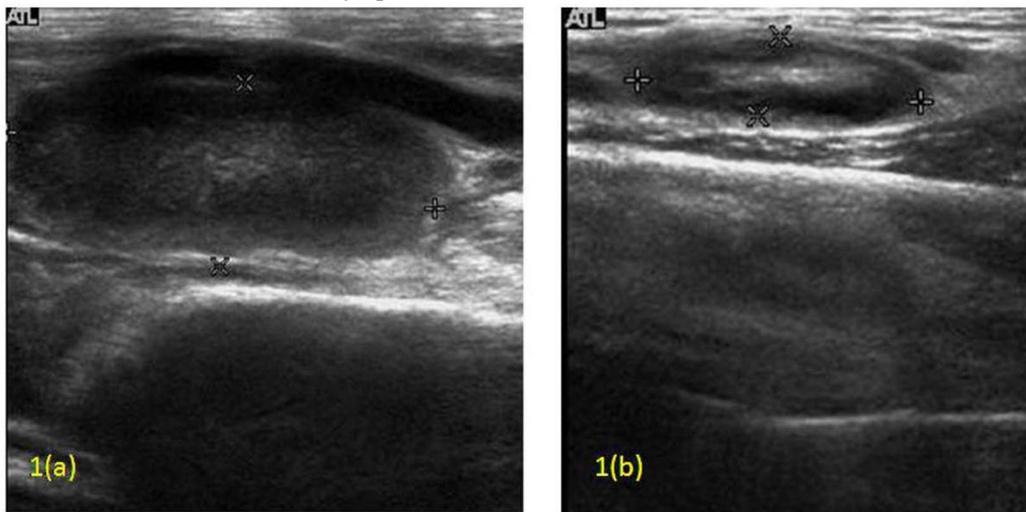


Figure 3(a). Conglomerate mid-arm nodes with heterogeneous texture and hilum not clearly visible.
(b) Marked decrease in size of lymph node showing normal hilum after treatment with DEC

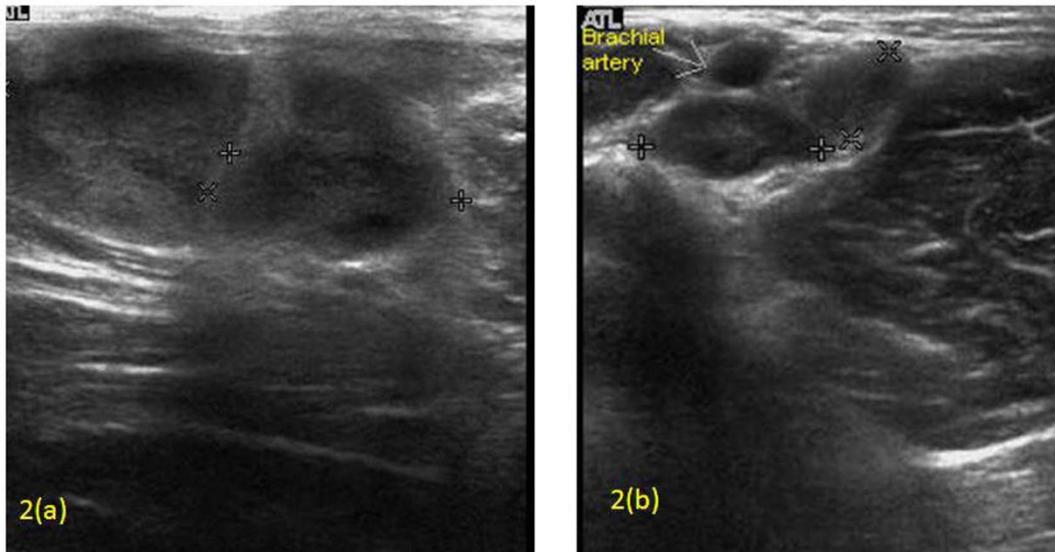
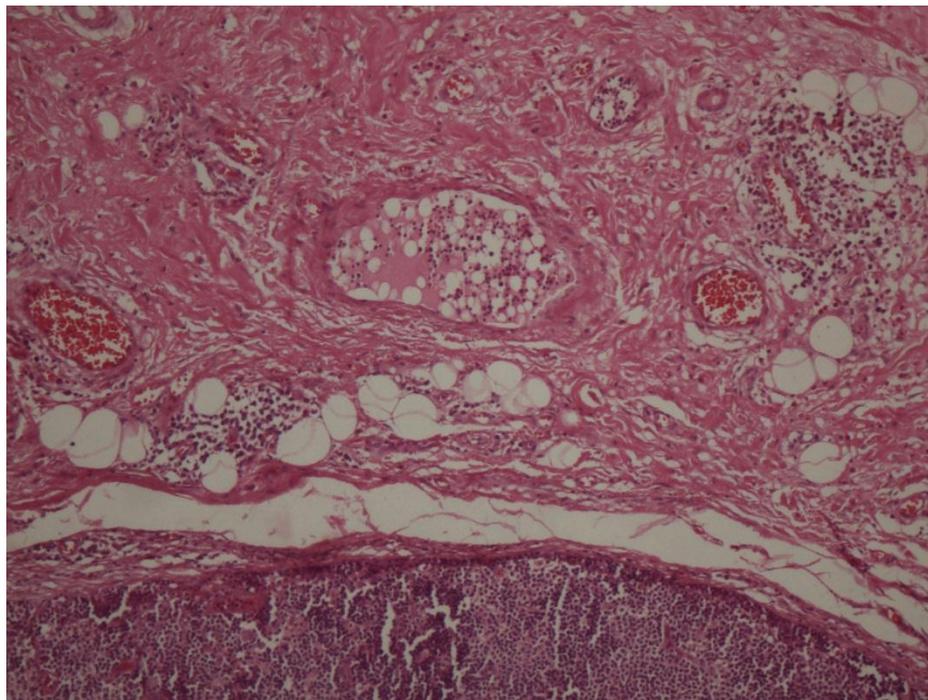


Figure 4. Haematoxylin and eosin stained section (10X) of lymph node showing eosinophilic infiltration with lymphangiectasia



bancroftian filariasis was made. The patient remained asymptomatic seven months after therapy.

Discussion

The superficial lymphatic channels in the arm are classically described as either following the cephalic vein or basilic vein. The medially located superficial lymphatics follow the course of the basilic vein and pass through the deep fascia in the mid arm to join the deep lymphatic system running with the brachial artery. The lateral group of lymphatic channels passes up the forearm and the arm, along the course of the cephalic vein [8]. The epitrochlear and deltopectoral regions are the major locations for lymph nodes of the arm. Surgical anatomy of mid-arm lymph nodes has been largely unclear. Fujiwara *et al.* [1] recently described surgical anatomy of mid-arm lymph nodes in a patient with malignant melanoma. The mid-arm lymph nodes are found to be situated halfway up the upper arm on the medial intermuscular septum, at the site where the brachial vessels, the median nerve, and the ulnar nerve run adjacent to each other. The mid-arm node lies adjacent to the basilic vein where lymphatic vessels ascend and converge. Apart from a few cases of malignant melanoma causing enlargement of these mid-arm lymph nodes, an extensive literature search failed to retrieve any case of benign enlargement of mid-arm lymph nodes. Epitrochlear lymph nodes are located on the medial side of the arm above the medial epicondyle of the humerus, superficial to the fascia of the biceps. The basilic vein and, more deeply, the neurovascular bundle, including the median nerve and brachial artery, lie laterally. Epitrochlear lymph nodes usually are impalpable clinically unless they are involved by a pathological process [9]. Isolated epitrochlear lymphadenopathy is rare and filarial involvement of epitrochlear lymph nodes until now has been an unreported entity.

Ultrasound is considered the method of choice in detection of superficial lymph nodes because computed tomography and magnetic resonance imaging have lower spatial resolution than high resolution sonography [10]. In bancroftian filariasis, ultrasound may identify adult worms in the dilated sinuses of lymph nodes as tubular anechoic structures exhibiting characteristic motility (known as the Filaria dance sign) [11]. Interestingly, sonographic examination in our patient showed two different appearances of lymph nodes in his arm: a few appeared benign with preserved hilum while others

had sonographic features suggestive of tubercular or lymphomatous involvement. Moreover, there was no evidence of lymphangiectasia or worms to suggest filariasis.

Circulating filarial antigen (CFA) detection tests are now regarded as the gold standard for diagnosing *Wuchereria bancrofti* infections [12]. The specificity of these assays is excellent, and the sensitivity is greater than that achievable by the parasite-detection assays. Moreover, circulating filarial antigen can be detected in patients of bancroftian filariasis irrespective of the presence of circulating microfilaria. Two commercial configurations of this assay are available, one based on ELISA methodology that yields semi-quantitative results, and the other based on a simple card (immunochromatographic) test, yielding only qualitative (positive/negative) answers. In our case, diagnosis was suggested by positive circulating filarial antigen supplemented with histopathological examination. Moreover, the size of the lymph nodes decreased markedly after two weeks of diethylcarbazine, which further supported the diagnosis.

This case reiterates the presence of mid-arm lymph nodes that have been described as interval lymph nodes in a few reported cases of malignant melanoma. This is perhaps the first report of mid-arm lymph node enlargement in a benign disease. Though India contributes to about 40% of the total global burden of the disease and 50% of the population are at risk of infection [13], involvement of epitrochlear and mid-arm lymph nodes in bancroftian filariasis has never been reported from this endemic country.

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