Case Report

Microfilariae coexistent with the cytology of adenocarcinoma gall bladder: An unnoticed comorbidity

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ABSTRACT

Lymphatic filariasis is endemic in 250 districts in 20 states and union territories of India. Microfilariae have been reported in body cavity fluids and cytological evaluation of various lesions including benign as well as malignant neoplasms. Here, we present a rare case of incidentally found microfilariae in a cytological smear from gallbladder adenocarcinoma. Along with supporting the cytology as an important tool in detection of asymptomatic filariasis, we wish to draw the attention toward a more dedicated approach to eliminate this disease entity and toward unnoticed comorbidities in carcinoma patients.

Key words: Comorbidity, elimination, gallbladder carcinoma, microfilariae

INTRODUCTION

The incidental finding of microfilariae in various benign cytologic smears is very common. Microfilariae in malignant effusions have also been reported, but their coexistence with solid malignant tumor at the primary site has been reported only very rarely.[1] The term "lymphatic filariasis" covers infection with three closely related nematode worms *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*. It is a global problem and a major social and economic scourge in tropics and subtropics.[2] The disease manifestations range from none to both acute and chronic manifestations. Though not fatal, the disease is responsible for considerable suffering, deformity, and disability.[2] In India, *W. Bancrofti* is the causative agent for 98% cases of lymphatic filariasis, and *B. Malayi* is for the rest 2%.[3] Both have nocturnal periodicity making it very hard to detect microfilariae in routine peripheral blood smears. Though India is an endemic region for filariasis, still finding microfilaria in fine-needle aspiration cytology (FNAC) smears is quite unusual.[4] The probability of coexistence of microfilaria and neoplastic lesion is also very low.[5] Hence, we are reporting a rare case, in which cytological smear of gall bladder lump diagnosed as adenocarcinoma, showed microfilariae incidentally.

CASE REPORT

A 35-year-old female complaining of pain abdomen for 2 months and abdominal distention for 10 days presented in our institute. A lump found in right hypochondrium in a location suggestive of gall bladder lump while examined clinically. Ultrasonography (USG) of the abdomen revealed a heterogeneous mass in gallbladder fossa. Her USG-guided FNAC was done with a 26 gauge needle fitted to a 10 mL disposable syringe under aseptic conditions. Aspirate

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Access this article online

Quick Response Code:

Website: www.ccij-online.org

DOI: 10.4103/2278-0513.176240

Cite this article as: Bika S, Kumar V, Dubey S, Kapoor A, Kumar HS. Microfilariae coexistent with the cytology of adenocarcinoma gall bladder: An unnoticed comorbidity. Clin Cancer Investig J 2016;5:193-5.

was smeared on glass slides, air dried and stained by Leishman-Giemsa stain. Microscopic examination [Figure 1] of smears revealed loose clusters of malignant epithelial cells [Figure 2] in the acinar and papillary pattern. In one of the smear, parasite having sheathed appearance, multiple, coarse, discrete nuclei extending from the head to tail except at the small terminal portion of the caudal end seen and identified as microfilariae of *W. bancrofti*. A diagnosis of gallbladder adenocarcinoma with microfilaria of *Wuchereria* was offered. Later on, the patient was approached to prepare repeated day time and night time smears as well. Where day smears demonstrated leukocytosis and eosinophilia only, night smears were positive for microfilariae [Figure 3].

DISCUSSION

Being considered as a potentially eradicable disease by the international task force for disease eradication,[6] subclinical cases or careers of filariasis must receive thorough attention. In India, 2016 is the informal target date for interrupting transmission.[2]

Man as definitive and mosquito as intermediate host is required to complete the life cycle of *W. bancrofti*. Adult worms live in lymph nodes where the gravid females release microfilariae, which circulate in the peripheral circulation.

Bancroftian filariasis causes a wide range of clinical manifestation. Acute phase is characterized by fever, lymphangitis, lymphadenitis, epididymo-orchitis, and funniculitis. Chronic stage is manifested as lymphadenopathy, lymphedema, hydrocele, and elephantiasis. A significant number of infected individuals remain asymptomatic throughout their lives.[7] The presence of microfilaria in almost all types of body fluids are reported. Getting microfilariae in tissues in association with neoplastic lesions is also not that strange. Microfilaria is detected by FNAC at different, unusual sites such as breast, thyroid, lymph nodes, liver, lung, salivary glands, cutaneous nodules, soft tissue nodule, oral and skin ulcers and also in bone marrow aspirates, joint aspirates, and other body fluids.[8]

Coexistence of microfilaria with various neoplasms (hemangioma of the liver, Ewing's sarcoma of bones, squamous cell carcinoma of maxillary antrum, anaplastic astrocytoma of the thalamus, nonHodgkin's lymphoma, dentigerous cyst, carcinoma breast, and cervical carcinoma) has been reported by different cytopathologists.[9] Only few cases, (to best of our knowledge two cases prior to this case) documenting association of filariasis with gallbladder carcinoma are present in the literature; one by Jha *et al*.[9] and another one by Varghese *et al*.[5] In the retrospective study carried out by Jha *et al*. in cytology department of a teaching medical college, 14 cases of cytological specimen

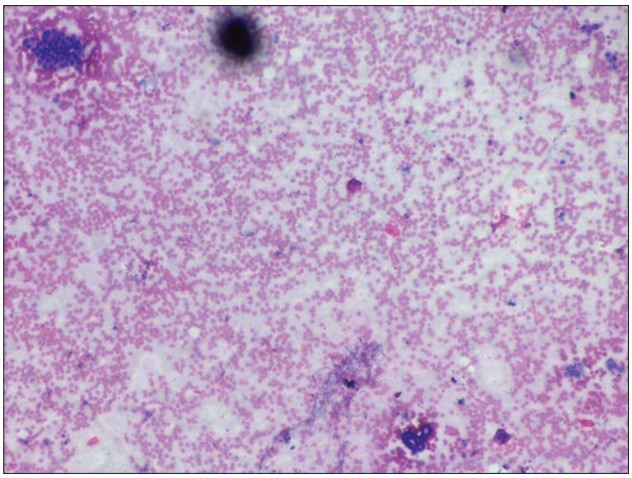

Figure 1: Photomicrograph showing a cluster of epithelial cells (upper left) and microfilariae (lower right) in the same field (Leishman and Giemsa stain, ×40)

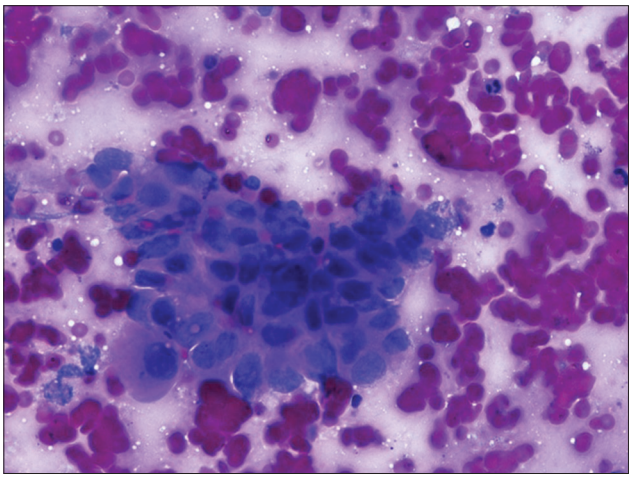

Figure 2: Photomicrograph showing cluster of malignant epithelial cells (Leishman and Giemsa stain, ×400)

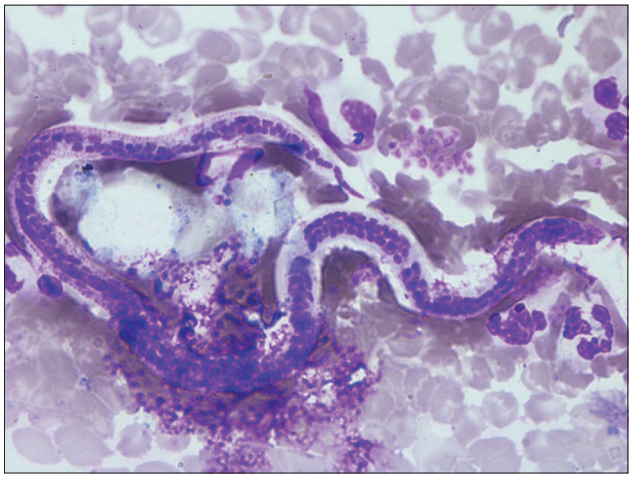

Figure 3: Photomicrograph showing microfilaria in night smear (Leishman and Giemsa stain, ×400)

out of 4291 (0.3%) showed microfilaria; 12 cases were from FNAC from different sites and 2 cases were from pleural

fluid.[9] Two cases showed ova in addition to microfilaria and one of them in addition showed fragment of adult worm. Microfilaria in 4 cases of FNAC and one case of pleural fluid were associated with malignant cells.[9] In a case report by Varghese *et al.*, microfilaria were detected in an ultrasound guided fine-needle aspirate of gallbladder lump diagnosed as gallbladder adenocarcinoma which is quite similar to our case.[5]

CONCLUSION

This case report highlights not only the rarity of association but also emphasizes that co-morbidities usually remain unnoticed under the aura of major diagnosis as carcinoma. Such case reports having coexistent filariasis may increase the awareness toward such possibilities and may improve management as well. Furthermore, cytology can be a valuable tool to demonstrate microfilaria in clinically unsuspected cases or in carriers. Preparation of night smears gets ignored in unsuspected cases making detection of carriers a great obstacle to eradication of filariasis.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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