Double-trouble: filariasis presenting as monoarticular effusion in an adolescent with Ewing’s sarcoma

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Clinical Presentation
• An 18-year-old male presented with high-grade fever, pain and swelling in left knee joint and significant weight loss since 3 months.
• The pain was subacute in onset, moderate to severe in intensity and interfering with ambulation.
• A month later, he developed pain in right knee joint, bilateral ankle joints and small joints of feet; there was no swelling.
• There were no skin lesions or significant lymphadenopathy.

Investigations
• Hemogram revealed bicytopenia.
• Rheumatoid factor was within normal limits
• Lactate dehydrogenase levels were raised.
• Radiographs: showed an irregular, permeative, lytic lesion in the lower meta-diaphysis of femur without any periosteal reaction (Figure 1)
• MRI: the lesion was found to be iso to hypointense on T1W and hyperintense on T2W images
• Core needle biopsy from this lesion revealed Ewing’s sarcoma.
• Knee Aspiration: was done in view of the atypical findings. Synovial fluid was sent for microbial culture and cytologic examination. Cultures were sterile

Discussion
• The present case highlights the importance of synovial fluid cytology in patients who have a knee effusion in the setting of a bone malignancy.
• Although such effusions can be reactive, it is imperative to consider aspiration whenever there are atypical clinical findings.
• The finding of microfilariae in synovial fluid is exceedingly rare, as the parasite is known to home mainly in lymphatics, spermatic cord and epididymis while breast, thyroid, body fluids and skin are unusual sites.
• Articular filariasis is an uncommon but treatable condition; diethlycarbazine is the drug of choice.
• A high index of suspicion needs to be maintained, especially in patients from endemic areas

Cytological Findings
• Cytological examination from the synovial fluid revealed the presence of many microfilariae along with few polymorphs, lymphocytes and degenerated cells.
• The microfilariae were ensheathed, having delicate curves with nuclei not extending up to the tail-tip, conforming to the morphology of Wuchereria bancrofti. (Figure 2)

Take Home Message
• Maintain a high index of suspicion of filariasis in patients from endemic areas; filariasis can co-exist with other pathologies and may be overlooked.
• Synovial fluid examination is a must in patients with atypical joint effusions.

Figure 1: AP radiographs of both knees, showing an irregular, permeative, lytic lesion in the lower meta-diaphysis of left femur without any periosteal reaction.

Figure 2: a) SurePath™ preparation showing ensheathed microfilaria with few neutrophils and lymphocytes in the background (Papanicolaou, 20x); b) Sediment smear showing similar microfilariae (MGG, 10X); c & d) SurePath™ preparation showing ensheathed microfilariae with the nuclei not reaching up to the tip of the tail (Papanicolaou, 40x)

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References