FINGER SARCOIDOSIS

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Key-word: Sarcoidosis

Background: A 47-year-old Caucasian woman presented with progressive swelling and pain of her left 5th digit over the previous couple of months. She is known to have sarcoidosis for 13 years and developed a painful swollen little finger 9 years ago when it was biopsied and confirmed as sarcoidosis. This settled and remained asymptomatic till recently. Her symptoms were alleviated with non-steroidal anti-inflammatory drugs.
Work-up

Plain radiograph of left hand (anteroposterior projection) (Fig. 1) shows soft tissue swelling overlying the proximal phalanx (arrow) in the little finger which demonstrates relative lucency and thinning of cortex with altered trabecular pattern and cystic changes noted distally.

Ultrasonography of little finger, longitudinal plane and extended field of view (Fig. 2) shows hypoechoic lesion involving the flexor tendon (arrow) and abutting the phalanges.

There is also a pathological fracture of the proximal phalanx noted (open arrow).

MRI of little finger (Fig. 3) shows on sagittal (A) and axial (B) T1-weighted images an intermediate signal infiltrative lesion involving the proximal and middle phalanges and the flexor tendon sheath. On coronal STIR (C) and sagittal Gd-enhanced T1-weighted fat saturated (D) image the infiltrative lesion is high signal intensity and involves the bone and flexor soft tissue. Interruption of volar cortex of proximal phalanx (arrow) in keeping with pathological fracture is noted. Intense enhancement is seen following gadolinium administration (D).

Radiological diagnosis

Based on imaging findings and on biopsy findings, the diagnosis of musculoskeletal sarcoidosis was made.

Discussion

Sarcoidosis is a chronic multisystemic granulomatous disease characterized by the development of noncaseating granulomas. Most patients present between 20 and 40 years of age. About one half of cases are diagnosed incidentally in asymptomatic patients by a routine chest radiograph. The most common organ system affected by sarcoidosis is the lung, with the most common presenting symptoms being cough, dyspnoea, and chest pain. Patients may also suffer from fatigue, weight loss, weakness, malaise, fever, and ocular disease. Musculoskeletal involvement by sarcoidosis is infrequent. Published literature reveals a wide range in the incidence of sarcoidosis involving bone from 1% to 13% and with an average of 5%. An accurate percentage is difficult to obtain as many skeletal lesions are asymptomatic and minor cystic bone changes can be seen in normal individuals. Most patients with sarcoidosis in bones already have some pulmonary involvement.

Involvement of the skeleton is usually limited to the small bones of hands and feet, where it is characterized by a lacy erosive process. Involvement of other bones is relatively rare, but there are reports describing sarcoidosis in tibia, spine, skull, pelvis, ribs, sternum and humerus.

On plain radiographs of appendicular skeleton patterns vary from cystic-like radiolucencies to lace-like or honeycomb appearances in the phalanges. The articular spaces are usually intact, unless extensive lesions (punched-out lesions typically in phalangeal heads involving the cortex and medulla) develop. There is often accompanied soft tissue swelling. Fractures are rare but may occur with extensive lytic disease.

Most of the lesions detected on MRI are non specific. MRI should be considered for the evaluation of the patients if standard radiographs were negative. Scans usually reveal marrow and soft tissue lesions or extension of granulomas beyond the cortex that are occult on plain radiographs. MR imaging may be helpful in certain clinical situations, such as differentiating the cause for dactylitis in a patient with sarcoid and gout.

Fat-saturated intermediate-density-weighted MR-imaging can help differentiate tophus (usually remains hypointense) from sarcoideal nodules (typically hyperintense).

The recognition of typical punched out lesions is relatively easy if the patient presents with multisystem features of sarcoidosis. However, if the bone lesion occurs in the absence of the typical pulmonary and extrapulmonary features of sarcoidosis the diagnosis may be difficult. Many clinical disorders including tuberculosis, histoplasmosis, coccidioidomycosis, leprosy, brucellosis, syphilis, Wegener’s granulomatosis, eosinophilic granuloma, multiple myeloma and lymphoma can cause bony lesions indistinguishable from those due to sarcoidosis.

Treatment of osseous sarcoid is mainly symptomatic. Corticosteroids decrease pain and soft tissue swelling but do not completely normalize bone abnormalities and increase the risk of osteoporosis, fractures, and avascular necrosis. Colchicine, indomethacin, and other NSAIDs may be used for symptomatic relief.

Bibliography

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