

Brown Tumour Mimicking Giant Cell Tumour: Problem of Diagnosis and Management

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INTRODUCTION:

Hyperparathyroidism is grouped into primary, secondary and tertiary. Brown tumour can develop in severe hyperparathyroidism patients. Radiologically, it appears as destructive lytic lesion, which can mimic any lytic bone tumour. Moreover, histologically, it resembles giant cell tumour. Laboratory tests can be used to aid in diagnosis.

METHODS:

We performed a retrospective review and found 3 patients with Brown tumour. Problems in diagnosis and management encountered in these patients were summarized.

RESULTS:

Case 1: He presented with chronic, worsening right knee pain. X-ray showed lytic lesion over lateral femoral condyle. Biopsy performed and showed mononuclear stroma cells and fibrous tissue, with numerous multinucleated osteoclast type giant cells. Diagnosis of giant cell tumour (GCT) was made. But subsequently he developed similar lesions over hip and spine. Laboratory and ultrasonic investigations confirmed diagnosis of Brown tumour, secondary to primary hyperparathyroidism (parathyroid adenoma).

Case 2: He presented with pathological fracture of right femur after fall. Similarly X-ray showed lytic lesion. Laboratory and ultrasonic investigations also pointed to Brown tumour secondary to parathyroid adenoma.

Case 3: This patient with underlying ESRF, presented with pathological intertrochanteric fracture of left femur. Laboratory investigations suggestive of tertiary hyperparathyroidism. Parathyroidectomy done. For fracture, initially she was treated with proximal femoral nail (PFN), but failed. Subsequently endoprosthesis was done.

DISCUSSIONS:

Brown tumour, also known as osteitis fibrosa cystica, is a condition found in severe hyperparathyroidism. It is a tumour-like lesion, appears as destructive lytic lesion radiologically. High index of suspicion is needed, to avoid misdiagnosis as in our first patient. Radiologically, Brown tumour appears as destructive lytic lesion, which can mimic any lytic bone tumour. Moreover, histologically, it resembles giant cell tumour. There is evidence that patient with hyperparathyroidism, once primary cause is treated and calcium homeostasis normalizes, even destructive lytic bony lesions tend to heal spontaneously. Once diagnosis is confirmed, referral to endocrinology team for treatment of underlying hyperparathyroidism was still the mainstay of treatment.

CONCLUSION:

High index of suspicion is needed to avoid misdiagnosis. Laboratory investigations are helpful in these situation. Histopathological examination can be misleading. Once diagnosis is made, underlying endocrinological problem needs to be treated first.

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