

# Excessive Bone Resorption In Over-Rigid Fixation In ESRF Patient, Mimicking Osteomyelitis

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## INTRODUCTION

Renal osteodystrophy in end stage renal failure sometimes can present with lytic bony lesion known as "Brown Tumour", which mimicking other bony tumour and osteomyelitis. Its pathophysiology is mainly due to secondary hyperparathyroidism that causing excessive bone resorption. However, it is unsure whether such resorption occurred over fracture end in this group patients. We present a case with excessive resorption over fracture end of femur after over-rigid fixation in an ESRF patient.

## CASE REPORT

29 years old gentleman, underlying diabetic mellitus, hypertension and end stage renal failure, sustained closed simple transverse fracture distal third left femur after traffic accident. Locking plate was done, but fixation was too rigid. (Fig. 1)

Post operation 6 months, noted X-ray (Fig.2) shows lytic with bone resorption over fracture end with raised immunological marker – ESR 103, CRP > 6. Diagnosis of septic non-union was made and he was planned for bone resection and ilizarov and transport. Intra-op finding there is no sign of infection, some bone samples were taken for culture and histopathology examination. 3 screws nearest to fracture site removed (2 from proximal, 1 from distal) to reduce rigidity of fixation.

All cultures were negative. HPE left femur marrow shows young granulation tissue seen, no inflammatory cell infiltration. HPE left bone shows normal cancellous bone with oedematous young fibrous tissue, with features suggestive of bone necrosis. Other blood investigation – Calcium 1.86, PTH – 14.2 (normal range 1.1-7.3), 25-OH Vitamin D: 46.0 (normal range 75-100).

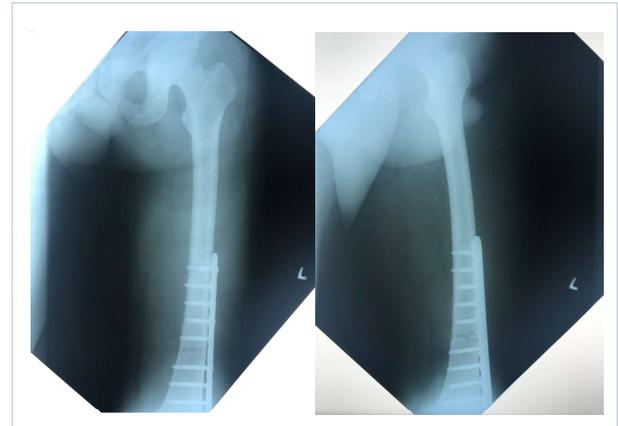


Fig.1

## DISCUSSION

ESRF patients are more prone to infection due to immunocompromised status. In addition, there is bony resorption due to secondary hyperparathyroidism. In the presence of fracture which fixation was done like in our patient, it causes difficulty in making diagnosis. Moreover, immunological markers like ESR and CRP may be abnormally high even though without any active infection.

## CONCLUSION

Our patients who has hyperparathyroidism secondary to ESRF, the bone formation and bone resorption are both increased, bone mass loss is due to acceleration of bone resorption which is greater than increased mineral apposition rate – Hungry bone syndrome. Patient on chronic haemodialysis are at greater risk of inflammatory reaction which are associated with increased levels inflammatory makers such as CRP and ESR.



Fig. 2

## REFERENCE:

1. Micheal Berkoben, L Darryl Quarles. Hungry bone syndrome following parathyroidectomy in end-stage renal disease patients.
2. Caspian J intern Med. 2013 Winter; 4(1):611-616: C-reactive protein and other markers of inflammation in haemodialysis patients