



MULTIPLE PATHOLOGICAL FRACTURES SECONDARY TO RENAL OSTEODYSTROPHY- A RARE CASE REPORT

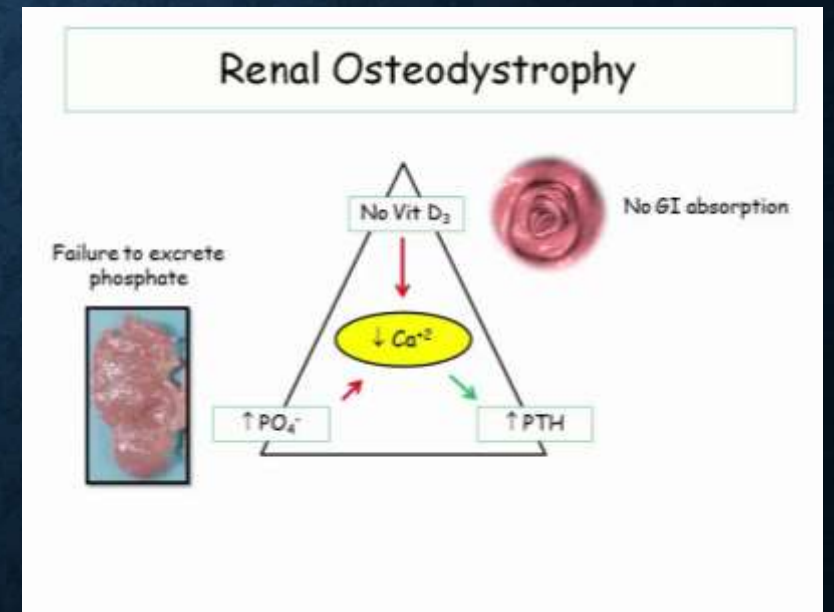
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BACKGROUND

Renal osteodystrophy is a common complication of chronic kidney disease, which may lead to defective mineralization, altered bone morphology, and/or bone turnover. Animal research found that bone changes occur even in the early stage of chronic kidney disease and with progression, the patient may show symptoms such as bone pain, joint pain, bone deformation, and even spontaneous fractures. Alterations of bone turnover and defective mineralization are associated with increased risk of fracture.⁽¹⁾ In this case we will see how the young patient with chronic kidney disease and multiple pathological fracture has been addressed.



CASE REPORT

A 17 years old boy who is a known case of chronic kidney disease came with pain in left thigh since 4 years and unable bear weight since 10 days. There was no history of trauma.. On examination, there was growth retardation in the form of decreased height and weight along with coarse hair, rachitic rosary, wrist and knee joint widening , muscle atrophy. There was tenderness over middle one third of thigh with painful and restricted hip movements. Based on clinical, radiographic and blood parameters, patient was diagnosed with femur and bilateral ulna shaft fracture secondary to renal osteodystrophy. Patient treated with Intramedullary TENS (Titanium Elastic Nail System) for femur shaft along with vitamin D and calcium supplements. Ulna fractures were managed conservatively with no weight bearing. Patient rehabilitated with walker assisted walking from 3 weeks and full weight bearing from 6 weeks.

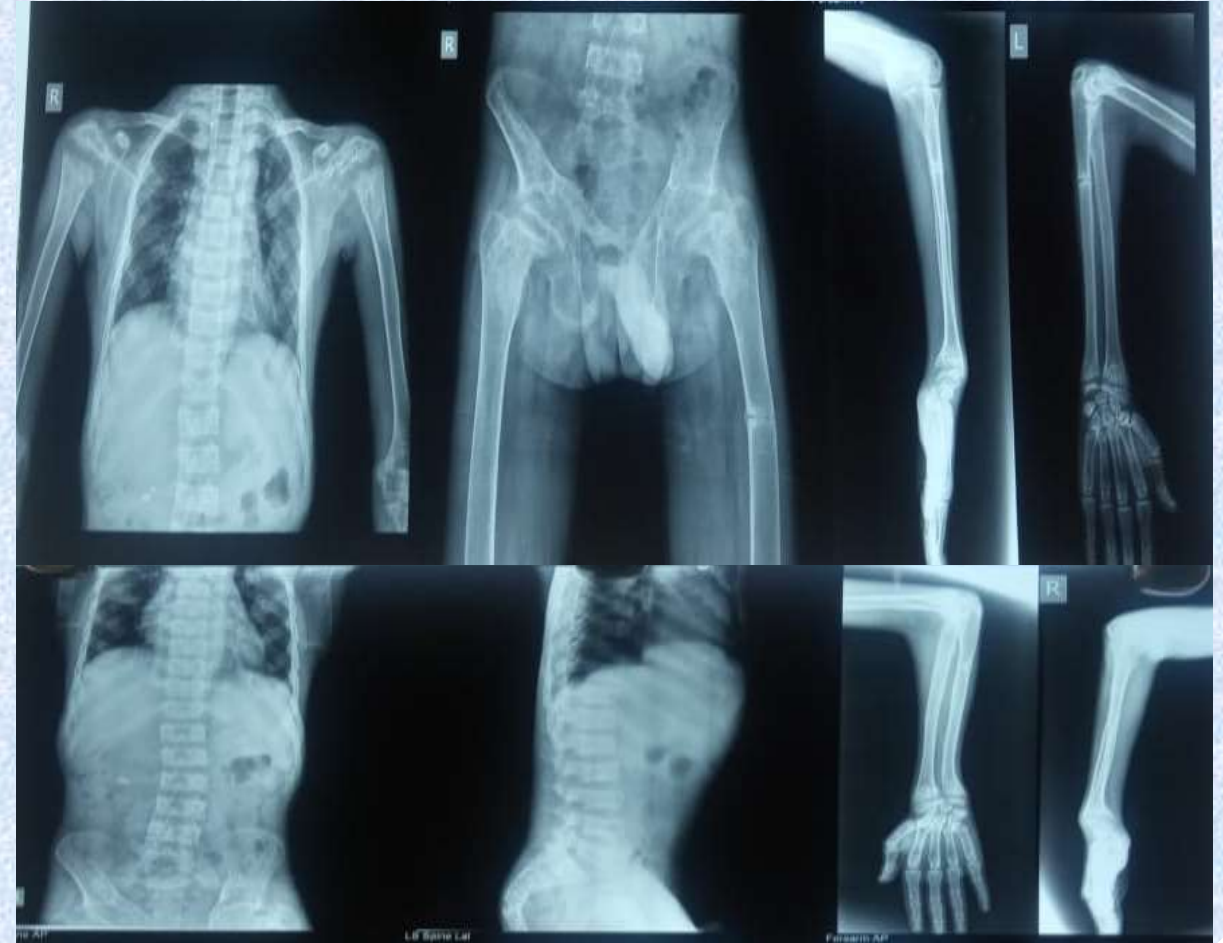


Fig. 1: Whole body scanogram

Date	Urea (mg/dl)	Scrutinise (mg/dl)	PTH (pg/dl)	Calcium (mg/dl)	Phosphorus (mg/dl)	Vitamin D (ng/dl)	ALP	ESR mm/1 hr
18/02/2020	84	5.4	239.1	7.3	9.2	39.5	355	50
25/02/2020	50	5.0	-	-	-	-	-	-
07/03/2020	71	4.4	152	9.2	4.5	-	180	-



Fig. 2: Intra-operative



RESULTS

Surgical management provided excellent pain relief and early ambulation of patient. Oral supplementation improved the systemic parameters which helped in healing of fractures.



Fig. 3 Follow up - '4 weeks'



Date	Urea (mg/dl)	Scrutinise (mg/dl)	PTH (pg/dl)	Calcium (mg/dl)	Phosphorus (mg/dl)	Vitamin D (ng/dl)	ALP	ESR mm/1 hr
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DISCUSSION

Surgical treatment of pathological fractures at the proximal femur provided early ambulation, and excellent pain relief. The surgery is well tolerated emotionally. It is necessary for improving the quality of life in such patients.⁽¹⁾ Flexible intramedullary nail leads to rapid fracture union by preservation of fracture hematoma and limited soft tissue exposure. It also helps in preventing damage to the physis. Renal osteodystrophy is characterized by abnormalities in bone turnover, mineralization, and bone volume. Here, vitamin D and calcium supplements improve renal parameters which ultimately eliminated the causative factor as well as the bone turnover required for fracture healing.

CONCLUSION

Surgical fixation of pathological fractures of weight bearing bones is necessary for improving the quality of life. Further Elastic intramedullary nail can be a good option in adolescent for the treatment of such fractures.

REFERENCES

3. Choy WS, Kim KJ, Lee SK, et al. Surgical treatment of pathological fractures occurring at the proximal femur. Yonsei Med J. 2015;56(2):460-465. doi:10.3349/ymj.2015.56.2.460