THE KOREAN SOCIETY OF NEPHROLOGY
APCN & KSN 2024
June 13(Thu) - 16(Sun), 2024 Coex, Seoul, Korea
Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

## Abstract Submission No.: A-0925

# Brown Tumor in Association with Secondary Hyperparathyroidism in CKD stage 5 Chronic Hemodialysis: a Case Report

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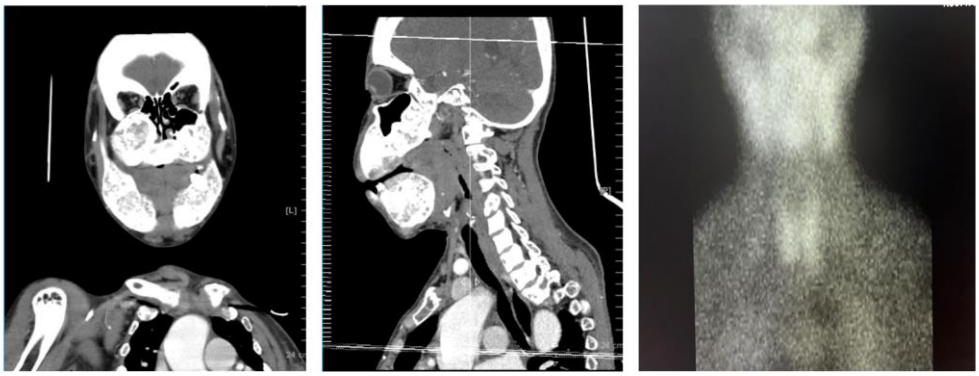
**Case Study :** Hyperparathyroidism can affect up to 54% of hemodialysis patients. Brown tumors are considered rare benign tumors with prevalence of 1.5-1.7% in secondary hyperparathyroidism. Parathyroidectomy required in about 15% of patients after 10 years dialysis therapy and was associated with an overall 28% reduction in all cause mortality. A 28 year old woman complained of lumps in the upper and lower jaw for past 5 years, progressively increasing in size. She had been diagnosed end stage chronic kidney disease (CKD) and underwent regular hemodialysis twice a week for 10 years. There are a solid mass in both maxilla and mandible. Laboratory results revealed Hb 8.3 g/dL, urea 137.0 mg/dL, creatinine 10.30 mg/dL, eGFR 4.6 mL/min/1.73m2, inorganic phosphate 3.8 mg/dL, Ca ion 1.05 mmol/L, Ca 8.8 mg/dL, intact hormon parathyroid (iPTH) level was 1.249 pg/mL, preoperative iPTH 2.864 pg/mL and alkaline phosphatase 2.479 u/L. A spectral CT scan identified four parathyroid lesions, the largest lesion was 2.4 cm located in the left superior parathyroid, no ectopic parathyroid lesions were observed. There were diffuse bone lesions with hyperostosis and expansion of the maxilla and mandible, multiple lytic lesions were observed, suggestive of a brown tumor. Biopsy revealed a fibrotic stroma, there are osteoblastic rimming on bone trabeculae surrounded by osteoblasts and multinuclear osteoclasts, consistent with osteofibrous dysplasia. MIBI scan showed retention of activity in the bilateral parathyroid with no retention or lesions as adenomas. Subtotal parathyroidectomy was performed, postoperative iPTH fall to 228.1 pg/mL, Ca ion 0.89 mmol/L, inorganic phospate 1.9 mg/dL and intravenous calcium was administered to suply calcium requirements. Brown tumor is one of rare manifestations of secondary hyperparathyroidism in CKD chronic hemodialisis. Parathyroidectomy is one of treatment option to lower parathyroid hormone and phospate levels aiming to improve clinical outcomes and reduction in all cause mortality.

mibi scan.jpg

CT scan of oropharynx/nasopharynx and MIBI scan



mibi scan.jpg

Spectral CT of oropharynx/nasopharynx