



## An image of a giant brown tumor due to severe secondary hyperparathyroidism


Imagem de tumor marrom gigante devido a hiperparatireoidismo secundário grave

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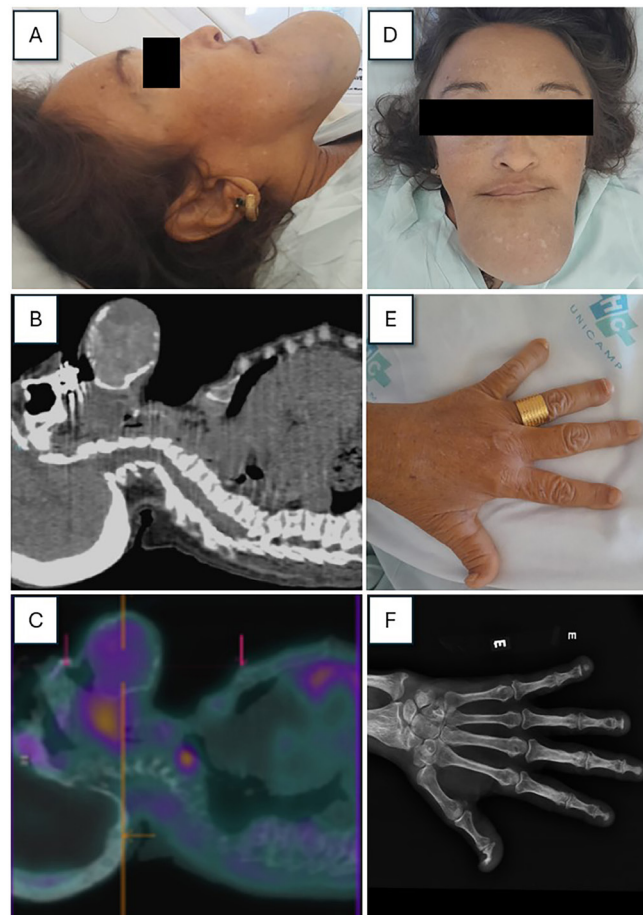
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A 49-year-old woman with chronic kidney disease on hemodialysis since 2004 sought medical attention due to bone pain, fractures (pelvis, femur), and deformities in her hands and face. Two years after subtotal parathyroidectomy, she reported that the mandible lesion had progressed (Figure 1). Laboratory test results were: serum parathormone 1227 pg/mL (15–65 pg/mL), phosphate

4.5 mg/dL (2.5–4.5 mg/dL), total-calcium 8.2 mg/dL (8.8–10.6 mg/dL), and alkaline-phosphatase 817 IU/L (33–98 IU/L). <sup>99m</sup>Tc-MIBI Spect/CT-scintigraphy<sup>1–3</sup> revealed a nodular image in the tracheoesophageal sulcus (ectopic parathyroid adenoma) and expansive bone lesions (“brown tumors”), with cortex disruption and soft tissue involvement in the mandible.



**Figure 1.** A and D, Giant tumor in the mandibular region, involving the lower dental arch with loss of teeth and bulging and protrusion of the palate; B and C, The 2-hour <sup>99m</sup>Tc-MIBI Spect/CT images show areas of hyper uptake of the radiopharmaceutical in nodular formation located between the esophagus and posterior trachea at C7 level measuring 1.8 cm, compatible with ectopic parathyroid hyperplasia, and expansive heterogeneous bone lesions (brown tumors) in the maxillary sinus, mandibular and mental regions, with disruption of the cortex and involvement of soft tissues in the mandible; E and F, Deformities of the distal phalanges, shortening due to bone resorption, deviations, diffuse bone demineralization, and deformities suggesting osteitis fibrosa.

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## AUTHORS' CONTRIBUTIONS

ACL, ACSM and RBO contributed to the data acquisition, writing and revising of the manuscript.

## CONFLICT OF INTEREST

The authors declare no competing interests.

## REFERENCES

1. Holzgreve A, Fabritius MP, Knösel T, Mittlmeier LM, Rübenthaler J, Tiling R, et al. Molecular imaging with <sup>18</sup>F-FDG PET/CT and (99m) Tc-MIBI SPECT/CT in osteitis fibrosa cystica generalisata. *Diagnostics (Basel)*. 2021;11(8):1355. doi: <http://doi.org/10.3390/diagnostics11081355>. PubMed PMID: 34441290.
2. Jiang SQ, Yang T, Zou Q, Xu L, Ye T, Kang YQ, et al. The role of (99m)Tc-MIBI SPECT/CT in patients with secondary hyperparathyroidism: comparison with (99m)Tc-MIBI planar scintigraphy and ultrasonography. *BMC Med Imaging*. 2020;20(1):115. doi: <http://doi.org/10.1186/s12880-020-00517-9>. PubMed PMID: 33059621.
3. Shavlokhova V, Goepfert B, Gaida MM, Saravi B, Weichel F, Vollmer A, et al. Mandibular brown tumor as a result of secondary hyperparathyroidism: a case report with 5 years follow-up and review of the literature. *Int J Environ Res Public Health*. 2021;18(14):7370. doi: <http://doi.org/10.3390/ijerph18147370>. PubMed PMID: 34299820.