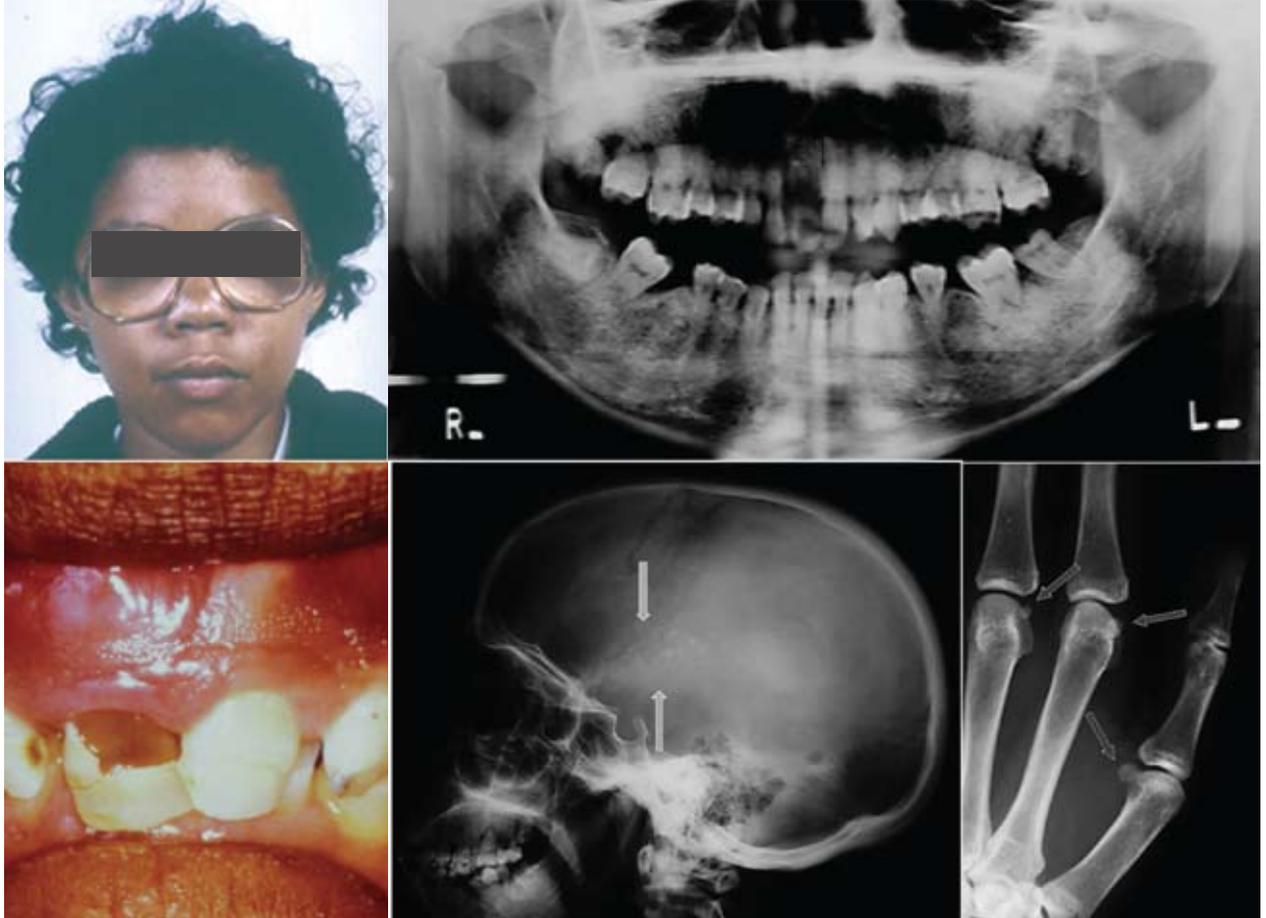


Maxillo-facial radiology case 114

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This twenty two year old female presented at the Oral Health Science centre with the main complaint that she was not happy with the aesthetics of her maxillary incisor teeth. She also at times experienced paresthesia, spasms of the muscles, especially around her mouth, but also in her hands, arms and throat. Clinical examination revealed the presence of enamel hypoplasia of her teeth.



INTERPRETATION

The lower left clinical picture shows enamel hypoplasia which is her main problem. The pantomograph shows increased mineralization with enamel hypoplasia and aberrant short tooth root formation. Due to the increase in bone density, and taking account of the severe cramps and spasms the patient was experiencing, she was referred for haematological and serological analyses. Haematological studies showed normal readings. However, chemical analysis revealed serum calcium of 5.1mg/dl (reference norm 9-11mg/dl) and serum phosphate of 6.1mg/dl (normal 3-5mg/dl). Other radiological findings included soft tissue calcifications in the brain (yellow arrows) and extra sesamoid bones associated with metacarpals (red arrows). A provisional diagnosis of idiopathic hypoparathyroidism was made, a rare systemic condition characterized by disturbances in calcium and phosphorous metabolism due to deficiency in parathyroid hormone which leads to tetanic manifestations. Increased neuromuscular excitability occurs if serum calcium falls below 8mg/dl. The condition can develop due to insufficient parathyroid production because of surgical removal of parathyroid glands, destruction of parathyroid gland from thrombosis, or, rarely, congenital absence. Cardinal dental features of

idiopathic hypoparathyroidism include aplasia, hypoplasia of teeth, short roots resulting from untreated hypocalcaemia during the development phase of the dentition, multiple impacted teeth and increased bone density. Chronic candidiasis is often seen as an early feature of idiopathic hypoparathyroidism, an uncommon condition of unknown etiology. Established criteria for its diagnosis are a) low serum calcium b) high serum inorganic phosphates c) renal insufficiency, steatorrhea, chronic diarrhoea and alkalosis must not be present and rickets and osteomalacia must be excluded. In hereditary and acquired hypoparathyroidism, parathyroid hormone (PTH) is either undetectable or in the normal range, and this finding in a hypocalcaemic patient is supportive of hypoparathyroidism, as distinct from ineffective PTH action, in which even mild hypocalcaemia is associated with elevated PTH levels. Hence a failure to detect elevated PTH levels establishes the diagnosis of hypoparathyroidism, while elevated levels suggest the presence of secondary hyperparathyroidism which is more common. A thorough evaluation of the dental and clinical findings aided by relevant investigations, can help in the early detection of this condition.

References

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