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Clinical Image

CT Features of Fibrous Dysplasia

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Fibrous dysplasia, a genetic developmental disorder of skeletal system, originates from sporadic mutations in the GNAS gene, which encodes the α-subunit of the Gs stimulatory protein [1-3].

Bone alterations involve the replacement of the normal marrow space within the affected bone with fibro-osseous tissue, resulting in the deformation of the bone due to poorly organized and structurally unstable fibrous tissue [2,3].

Fibrous dysplasia can involve one single bone (monostotic) or many bones (polyostotic)with skin pigmented lesions (Jaffe's type) and endocrine disorder (McCune-Albright syndrome) [4].

Patients with polyostotic forms are typically diagnosed during childhood or adolescence, often presenting with symptoms such as pain, pathologic fractures, swelling, or vaginal bleeding. In contrast, those with monostotic forms are usually asymptomatic, leading to the diagnosis being made incidentally [2].

Computed Tomography (CT) is the examination of choice for diagnosis and follow-up, due to its superior ability to provide detailed images of the bone and accurately assess the extent of the lesion especially for craniofacial lesions [5]. CT imaging features include [3] **(Figure 1)**:

- Smooth and homogeneous ground glass.
- Dense and sclerotic lesion.
- Cystic lesion.
- Well circumscribed borders.
- Expansion of the affected bone and endosteal scalloping with persistence of smooth cortical thinning.
- The lesion may be surrounded by a layer of thick sclerotic reactive bone: rind sign.

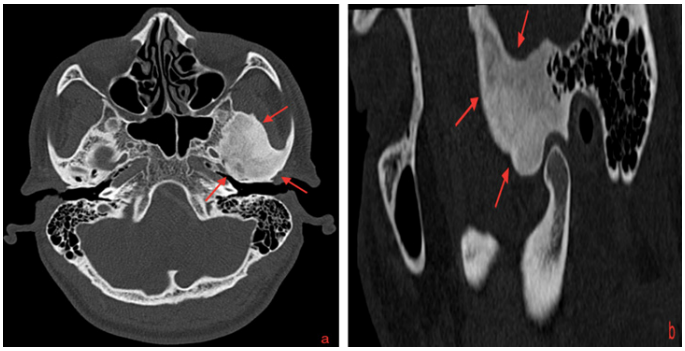

Figure 1: Axial(a) and sagittal (b) computed tomographic images of craniofacial fibrous dysplasia (red arrow) showing expansive mixed lesion with ground glass opacity involving temporal and sphenoid bones.

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