Pedunculated osteoma of the temporal bone squama: a rare occurrence
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Authors: Ankur Arora, Vandana, Abhay Kapur, L. Upreti, Sunil Kumar Puri
Patient: 25 years, male

Clinical History:
A 25-year-old man, otherwise healthy, presented with a hard swelling in front of the right ear, which had been gradually growing in size for the past 6 to 7 years.

Imaging Findings:
A 25-year-old otherwise healthy man, presented with a hard swelling in front of the right ear, which had been growing with a very slow pace for the past 6 to 7 years. Even though he had no pain or any other neurological symptoms, he sought medical attention for cosmetic reasons. His systemic, CNS and haematological examination were within normal limits. Local examination revealed a non-mobile, non-tender, hard swelling, anterior-superior to the right pinna. Plain skiagram (AP, lateral and oblique projections) of the skull revealed a lobulated radio-dense projection from the right temporal bone raising the possibility of an osteoma. CT examination was suggested to better evaluate the lesion morphology, determine its area of contact with underlying bone and rule out any intra-cranial extension. A non-contrast CT examination revealed an exophytic well circumscribed “cauliflower” like osseous growth arising from the squama of right temporal bone. There was a narrow stalk connecting it to the outer cortex, with normal appearing diploic space and inner table. Based upon the imaging findings, diagnosis of a pedunculated osteoma was made. 3-D, MIP (maximum intensity projection) and SSD (surface shaded display) images were generated for the operating surgeons to assist them in better planning the surgical approach. The growth was successfully excised with uneventful post-op period. Histology confirmed it to be a compact osteoma.

Discussion:
Osteoma is a benign tumour of membranous bone commonly involving the skull and facial bones. They most commonly originate from the paranasal sinuses, and constitute the most common benign tumour of the paranasal sinuses. These are slow growing and generally asymptomatic, mostly presenting as an unsuspected incidental radiodense shadow within the paranasal sinuses while imaging the head and neck. 95% osteomas in the sinonasal region arise from the fronto-ethmoid sinuses, frequently from the floor of frontal sinus. Osteomas of the temporal bone occur infrequently, and when they occur, are seen most common in the external auditory canal. Barring lesions of the external auditory canal, osteoma of the temporal bone are a definite uncommon occurrence. Amongst the extra-canicular sites the mastoid area is the most common, although they have also been reported in the squama, middle ear structures, promontory, internal auditory canal, and the styloid process. These tumours are rare before puberty and occur most often in young adults, more commonly in women. While the exact aetiology is not well understood, they are thought to arise from preosseus connective tissue. The most widely accepted theories for the etiopathogenesis of osteoma include embryogenesis and metaplasia following recurrent local irritation and trauma. Osteoma of the skull are classified as compact, spongy and mixed. Compact osteoma has Haversian system
whereas spongy osteomas have trabecular bone with marrow. Compact osteoma usually demonstrate a wider base and are very slow growing whereas spongy osteoma are more likely to be pedunculated and grow relatively faster. Osteoma often being asymptomatic and incidentally diagnosed does not always need treatment. Surgical removal is indicated when growth of the osteoma causes distressing symptoms or cosmetic issues. They may occur as a feature of Gardener’s syndrome, which is characterised by multiple osteomas, intestinal polyps, epidermoid inclusion cysts, fibromas of the skin and mesentry. It is important to differentiate osteomas from exostoses. They should be considered separate clinical entities. Osteomas are bony growths that are single, unilateral and pedunculated and arise from the tympanosquamous or tympanomastoid suture lines laterally, whereas exostoses are multiple, usually bilateral and broad based and are found medial to the sutures of the temporal bone. Osteomas are true bone tumours and exostoses are thought to be a reactive condition secondary to multiple cold-water immersions or recurrent otitis externa.

**Differential Diagnosis List:** Pedunculated osteoma of the temporal bone squama

**Final Diagnosis:** Pedunculated osteoma of the temporal bone squama

**References:**

Figure 1

Description: Skull radiographs reveal a lobulated radio-dense growth from the right temporal bone.

Origin:
Description: Skull radiographs reveal a lobulated radio-dense growth from the right temporal bone.
Origin:
Description: CT examination shows an exophytic pedunculated osseous growth arising from squamous part of temporal bone. **Origin:**
Description: Surface shaded display (SSD) images are depicting the lesion well. Origin: