

## **It's Not Just a Bump on the Head – A Pictorial Review of Calvarial Anatomy and Pathology**

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### **Introduction:**

There are a wide range of both benign and malignant tumors that can affect the calvarium, as well as non-neoplastic conditions and anatomic variations that can be discovered on imaging. These often rare lesions are frequently discovered incidentally on CT and MRI imaging of the head that was ordered for unrelated indications. The radiologist must have a thorough search pattern and an awareness of the variety in pathology to make these diagnoses. This exhibit will provide a pictorial review of the normal anatomic variants and neoplastic and non-neoplastic lesions that involve the calvarium with an emphasis on key differentiating imaging features.

### **Approach/Methods:**

- Using CT and MRI representative case files, we will review normal anatomic and congenital variants of the calvarium such as arachnoid granulations (Fig 1) and enlarged parietal foramina (Fig 2) and the associated relevant anatomy.
- We will also use case files to show a variety of neoplastic and non-neoplastic calvarial lesions ranging from the more common fibrous dysplasia and multiple myeloma to the more rare osteosarcoma (Fig 3) and en plaque meningioma (Fig 4), and many in between.
- There will be an emphasis on defining imaging characteristics that differentiate the various lesions and incorporating clinical information to formulate an appropriate differential diagnosis.

### **Discussion/Results:**

Using a case-based approach, this exhibit will review the defining imaging characteristics of various anatomic variants and pathologies that affect the calvarium. Incorporation of clinical presentation and history to formulate an appropriate differential diagnosis will also be discussed.

### **Summary/Conclusion:**

An awareness of the variety of pathologies that can affect the calvarium, as well as an understanding of normal anatomic variants is necessary for the complete radiologic evaluation of head imaging. At the conclusion of this exhibit, viewers should be familiar with normal anatomic variants of the calvarium, as well as the defining imaging characteristics of both common and uncommon pathologies, and the incorporation of clinical information to formulate an appropriate differential diagnosis.

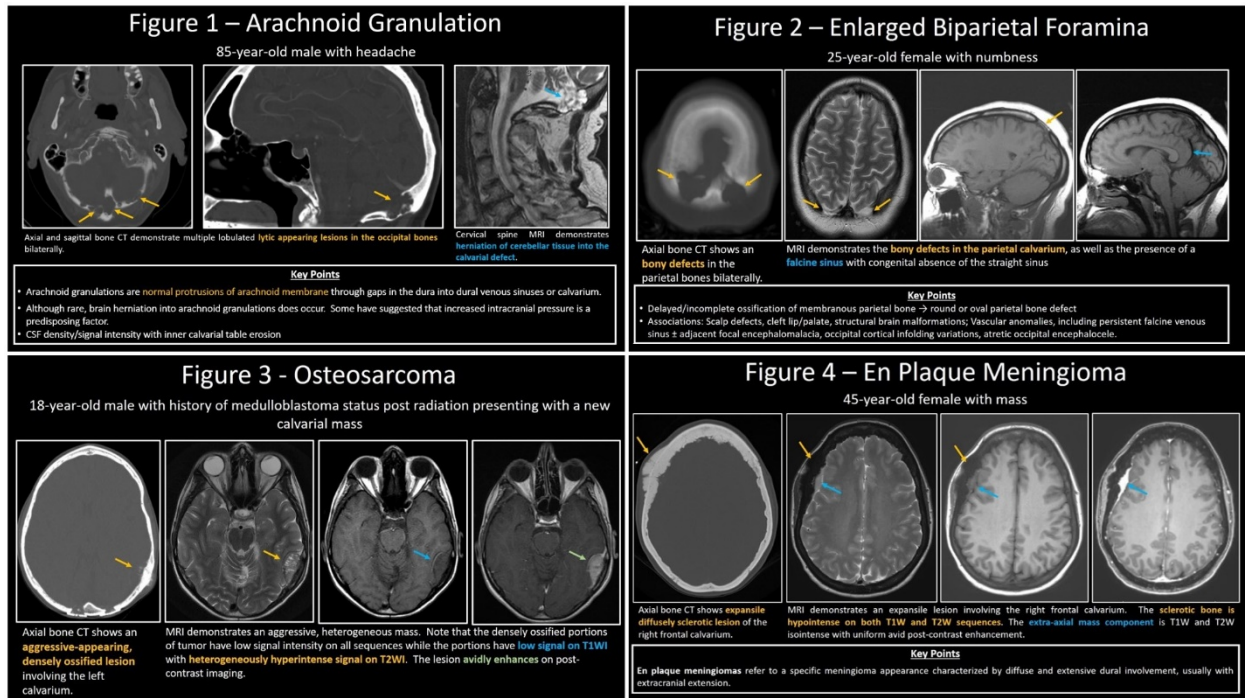


Figure (1)

**References:**

1. Lloret I, Server A, Taksdal I. Calvarial lesions: a radiological approach to diagnosis. *Acta Radiologica* 2009;50(5):531-542. DOI: <https://doi.org/10.1080/02841850902795274>
2. Colas L, Caron S, Cotten A. Skull vault lesions: a review. *American Journal of Roentgenology* 2015;205(4):840-847. DOI: <https://doi.org/10.2214/ajr.14.13415>