

CASE REPORT

AN UNUSUAL SKULL WITH MULTIPLE BONY TUBERCLES ON THE SUPERIOR SURFACE OF THE CALVARIA – A CASE STUDY

C. Sheshgiri¹, Shishirkumar², Girish V. Patil³, Apoorva D⁴, Thejeshwari⁵

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ABSTRACT: In the routine osteology class held for first MBBS in DM-WIMS, Meppadi, Kerala; a skull was found to have multiple bony lesions on the superior surface of the calvarias. The lesions were multiple, rounded and varied from a diameter of 1mm to 8mm. The lesions crossed the suture line at some places.

KEYWORDS: Calvarias, Lesions, Osteology, Skull, Suture.

INTRODUCTION: Tumors of the skull are uncommon, with estimates varying between 1% and 4% of all bone tumors.^[1-3] They most commonly present as an enlarging soft or hard mass over the skull with or without some local tenderness. The differential diagnosis is broad and includes both benign and malignant lesions. Most lesions are radiolucent and osteolytic and are more common in young adults. Imaging studies are essential in the workup.

CASE STUDY: In the routine osteology class held for first MBBS in DM-WIMS, Meppadi, Kerala; a skull was found to have multiple bony lesions on the superior surface of the calvarias. The lesions were multiple, rounded and varied from a diameter of 1mm to 8mm. The lesions crossed the suture line at some places. This aroused a curiosity amongst the faculty of Anatomists. So the skull was sent to the Department Of Radiology and a Computerized Tomography [CT] scan was taken and the skull was evaluated.



Fig. 1: Showing multiple bony lesions on the skull

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Fig. 2: Showing the bony lesions crossing the suture line

DISCUSSION: The differential diagnosis that was considered before taking the C.T scan was exostosis, osteoid osteoma and malignant metastatic lesions.

Exostosis is a benign lesion. It is composed of a skin-covered, circumscribed mass of dense bone located at the meatus or within the external auditory canal.

Auditory exostoses have been recorded in skeletal remain worldwide from prehistory until recent history. Today, this trait is common in individuals who practice aquatic sports, and prevalence of auditory exostoses and degree of canal obstruction are positively correlated with intensity and number of years involved in aquatic sports.^[4]

The ivory exostosis, or, as it is sometimes called, the ivory osteoma, is a bump of dense bone most often seen on the cranial vault or in relation to one or other of the nasal sinuses. In keeping with its usual origin from a bone preformed in membrane it is not capped by cartilage as is the osteochondroma or exostosis which is commonly seen arising from a long bone. In hospital practice ivory exostoses are very rare, though probably there are many cases which are non-symptomatic. Smith (1952), reporting from Duke University found a total of forty cases in 176,000 surgical specimens examined in their pathology department over a twenty year period.^[5]

Osteoid osteoma is a benign skeletal disorder, and new bone forming tumors located within bones or developing on them. They are often asymptomatic, and are incidentally found on radiological investigations. Osteomas are frequently found in the frontal-ethmoid region. In the temporal bone, the external auditory canal is the predominant location, rarely present in the mastoid, the squamous portion of the temporal bone, inner ear canal and middle ear.

Malignant lesions which are metastatic are not very commonly deposited on the skull.

Skull metastases are seen in 15-25% of all cancer patients.^[6] The demographics of patients with skull metastases will mirror those of the primary tumor, and as such in general they are found in the older population. Primary tumors most frequently encountered as metastases to the skull include^[6]

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- breast cancer
- lung cancer
- melanoma
- prostate cancer
- thyroid cancer (usually follicular)
- renal cell cancer
- lymphoma
- leukemia
- multiple myeloma

The CT scan revealed the following results.



Fig. 3: Showing the 3-D reconstruction of the skull

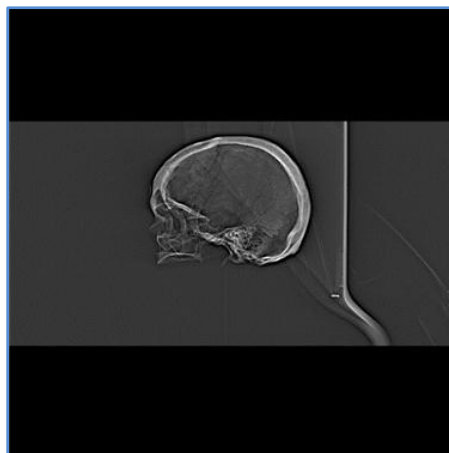


Fig. 4: Showing the lateral view

The bony lesion has not eroded the outer and the inner tables.

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Fig. 5



Fig. 6

Figure 5 and 6 showing no other lesions in any of the sinuses and the base of the skull.

CONCLUSION: The lesions may be osteoma which is in the initial stages and so has not eroded the outer and inner tables of the skull. The lesions may also be malignant lesions which may have spread from other bony or non-bony tumors.

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AUTHORS:

1. C. Sheshgiri
2. Shishirkumar
3. Girish V. Patil
4. Apoorva D.
5. Thejeshwari

PARTICULARS OF CONTRIBUTORS:

1. Professor & HOD, Department of Anatomy, D. M. Wayanad Institute of Medical Sciences, Meppadi, Kerala. India.
2. Assistant Professor, Department of Anatomy, D. M. Wayanad Institute of Medical Sciences, Meppadi, Kerala. India.
3. Associate Professor, Department of Anatomy, D. M. Wayanad Institute of Medical Sciences, Meppadi, Kerala. India.

4. Assistant Professor, Department of Anatomy, D. M. Wayanad Institute of Medical Sciences, Meppadi, Kerala. India.
5. Assistant Professor, Department of Anatomy, D. M. Wayanad Institute of Medical Sciences, Meppadi, Kerala. India.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Shishirkumar,
Assistant Professor,
Department of Anatomy,
D. M. Wayanad Institute of Medical Sciences,
Meppadi, Kerala. India.
E-mail: dr.shishirnayak1986@yahoo.com

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