



## INTRAOSSIOUS EPIDERMOID CYST.

### Pathology

**Dr. Saurabh Sharma\***

MD Pathology, Asstt. Prof. Dept of Pathology, Dr. Rajendra Prasad Medical college.  
\*Corresponding Author

**Dr. Rashmi Raina**

MD Pathology, Assoc. Prof. and Head, Dept. of Pathology, Dr. Rajendra Prasad Medical college,

### ABSTRACT

Intraosseous epidermoid cysts are squamous epithelial lined benign cysts within the bone, presenting clinically as radiolucent lytic bone lesions. Clinical as well as radiological diagnosis of epidermoid cyst of bone can be challenging at times. Fine needle aspiration cytology is sufficient to make the correct diagnosis.

### KEYWORDS

Intraosseous epidermoid cysts, aspiration cytology, lytic bone lesion

### INTRODUCTION:

Intraosseous epidermoid cysts are squamous epithelial lined benign cysts within the bone. Epidermoid cyst of soft tissue is a common entity, however intraosseous epidermoid cyst are uncommonly reported. In bones the affected site includes the skull, phalanges, maxilla, mandible, tibia, ulna, femur or sternum. Two different theories try to explain their origin. One theory sees traumatic implantation of epidermal cells as causative. A second theory is based on faulty embryogenesis.<sup>[1]</sup> Clinical as well as radiological diagnosis of epidermoid cyst of bone can be challenging and requires pathological evaluation for confirmation of diagnosis.<sup>[2]</sup> The case is presented to highlight the role of aspiration cytology as an investigation in the diagnosis of epidermoid cyst.

### CASE REPORT

A 10 year old male child presented with history of progressively increasing painful swelling in the distal phalanx of his left thumb for 2 months. The patient did not remember any history of trauma to his thumb in past. There was no significant past history. On examination, swollen distal phalanx of the left thumb with obliteration of the angle of nail bed was observed. Rest of the physical and systemic examination was normal. X-ray of left hand focusing thumb area showed a well-circumscribed osteolytic lesion with thinned-out cortex in the terminal phalanx (Fig. 1). Fine needle aspiration was done and microscopy showed cellular smears with sheets of anucleate squames and benign squamous epithelial cells. No inflammatory cell was seen.(Fig-2) A cytological diagnosis of intraosseous epidermoid cyst of the phalanx of thumb was made.

### DISCUSSION

Bony epidermoid cysts of the phalanx are an uncommon lesion and were initially documented by Harris.<sup>[3]</sup> In the histological classification of bone tumors, World Health Organization has defined intraosseous epidermoid cyst as an infrequent non-neoplastic lesion, also called 'keratin or squamous epithelial cyst' which involve the jaw, the distal phalanges and the skull.<sup>[4]</sup> It may be either congenital or traumatic in origin. Trauma can be trivial or major, which may have been sustained many years prior to presentation. It has been proposed that it may result from implantation of epithelial cells into the subcutaneous tissues as a result of trauma.<sup>[5]</sup> Surviving cells would subsequently proliferate and produce keratin. It is thought that phalangeal intraosseous epidermoid cyst, occurring in the absence of trauma, may be due to the proliferation of intraosseous inclusions of epithelial elements during embryogenesis.<sup>[1]</sup>

The patient with a phalangeal cyst generally shows initial signs of gradually increasing painful swelling, but the process may be asymptomatic. Nail may become deformed. The pain may be of sudden onset if there is a pathological fracture, or more gradual. There may be a pathological fracture of the phalanx. The skin is often normal in appearance, though there may be scars from previous trauma.<sup>[2]</sup>

Intraosseous epidermoid cyst is confused with other osteolytic disorders. On radiology, the differential diagnosis of such lesions

includes enchondroma, simple bone cyst, multiple myeloma, giant-cell tumour, intraosseous extension of glomus tumour and metastatic tumours.<sup>[5],[6]</sup> Histopathological examination of the excised specimen is necessary for the diagnosis. However needle aspiration is sufficient for making a correct preoperative diagnosis.<sup>[6]</sup> Thus fine-needle aspiration of such lesions is minimally invasive, saves time, spares unnecessary and costly investigations and guides in planning of treatment. The most effective treatment of phalangeal intraosseous epidermoid cyst is surgical excision, with curettage of the phalanx.<sup>[7]</sup> Adequate curettage should be ensured to prevent recurrence which is due to a remnant capsule after insufficient curettage. Complete resection of the affected bone and lesion tissue is the most reliable procedure in recurrence.<sup>[8]</sup>

### CONCLUSION

Most of the patients invariably have their first contact with the primary care physicians. Awareness of the entity can reduce unnecessary agony of the patients as open biopsy is not required and fine needle aspiration cytology is used to confirm the diagnosis.

### ACKNOWLEDGEMENTS

None

### FUNDING

None

### COMPETING INTERESTS

None declared.



**Figure-1:** X-ray AP view showing intraosseous epidermoid cyst of distal phalanx of left thumb.



**Figure-2:** Smear showing predominantly sheets of anucleate squames and few benign squamous epithelial cells (Giemsa x40)

**References**

1. McGraw P, Bonvento B, Moholkar K. Phalangeal intraosseous phalangeal cyst. *Acta Orthop Belg* 2004;70:365-7
2. Kalsootra N, Singh M, Sharma S, Singh D. Intraosseous epidermoid cyst of the finger phalanx: a case report. *Orthopaedic Research and Reviews* 2010; 2:71-3
3. Harris RI. Sebaceous cyst of the terminal phalanx of the thumb, an unusual form of bone tumor. *J Bone Joint Surg* 1930; 12:647-8.
4. Schajowicz, F. Histological typing of bone tumors. In: World Health Organization (Ed.) *International histological classification of tumors*. Springer-Verlag Telos, 1993, Vol. 2: 51.
5. Simon K, Leithner A, Bodo K, Windhager R. Intraosseous epidermoid cysts of the hand skeleton: a series of eight patients. *J Hand Surg Eur Vol.* 2011; 36:376-8.
6. Handa U, Kumar S, Mohan H. Aspiration cytology of epidermoid cyst of terminal phalanx. *Diagn Cytopathol* 2002; 26:266-7.
7. Hamad AT, Kumar A, Kumar CA. Intraosseous epidermoid cyst of the finger phalanx: a case report. *J Orthop Surg* 2006; 14:340-2
8. Kurosawa K, Kobayashi R, Takagishi K. Distal phalangeal reconstruction for recurrent intraosseous epidermoid cyst of the finger- a case report. *Hand Surgery* 2011; 16:375-7