ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

OSTEOLYTIC LESIONS OF SKULL

B K Das[1], Bismay Das[2], Pratibha Shakya[3], Deepshikha Singh[3], Chhandamayee Mohanty[3]

1.Department of Pediatrics, Institute of Medical Sciences, Banaras Hindu University, Varanasi
2.Department of Pathology, Fr Mullar Medical College, Mangalore
3.Department of Anatomy , Institute of Medical Sciences, Banaras Hindu University, Varanasi

Manuscript Info

Manuscript History:

Received: 19 October 2015
Final Accepted: 22 November 2015
Published Online: December 2015

Key words:

Calvarium, Tumors, children, Langerhans cell histiocytosis

Corresponding Author

B K Das

Abstract

Introduction- The calvarium is formed by frontal, parietal, occipital and temporal bones. Focal lesions of calvarium may originate from bony structures or may be secondary to invasion of the skin or brain-based lesions into the bony structures.

Case Report- A four years old male child presented with multiple soft swelling on scalp, pyrexia, weight loss of 2 months duration. The skull radiograph showed multiple lytic lesions without any surrounding sclerosis. The biopsy from scalp lesions confirmed the diagnosis of Langerhans Cell Histiocytosis.

Conclusion- Calvarial tumors in children ranges from benign to malignant. They have to be carefully evaluated.

INTRODUCTION

The calvarium encasing the brain parenchyma is formed by the frontal, parietal, occipital bones and a small portion by the temporal bones. It consists of 2 cortical layers, the inner table and the outer table, and space between those 2 layers is known as diploe, which contains bone marrow. Focal lesions of the calvarium may appear primarily from bony structures, or they may be secondary to invasion of the skin or brain-based lesions into bony structures (Yalçın et al., 2007). Well defined borders and sclerotic margins are characteristic of benign lesions. Slow growing tumors lead to thinning in the neighboring calvarium, whereas aggressive tumors lead to extensive destruction.

In present case report child was suffering from Langerhans cell histiocytosis(LCH). It is a rare disease having unknown etiology. There are three clinical variants of Langerhans cell histiocytosis- Eosinophilic granuloma, Letterer siwe disease and Handschuller Christian disease (Teseuk et al., 2003). Incidence of LCH is 1 in 200,000 children. It occurs most often between 1-4 years of age group. In the patients with Langerhans cell histiocytosis, bone involvement occurs in approximately 78% and often includes the skull (49%).

Case Report-

A four years old male child presented with multiple soft swelling on scalp, pyrexia of unknown origin, weight loss, malaise and irritability of 2 months duration. There was no history of trauma. There were no skin lesions, significant lymphadenopathy or hepatosplenomegaly. The child had no growth failure except reduced body weight. CNS examination was normal. The skull radiograph showed multiple lytic lesions without any surrounding sclerosis. The chest radiograph was normal. The blood counts, liver function tests, coagulation profile and urine osmolality were within normal limits. The biopsy from the scalp lesions confirmed the diagnosis of Langerhans Cell Histiocytosis (LCH). The child received etoposide and steroids but died after 4 weeks of initiation of therapy.

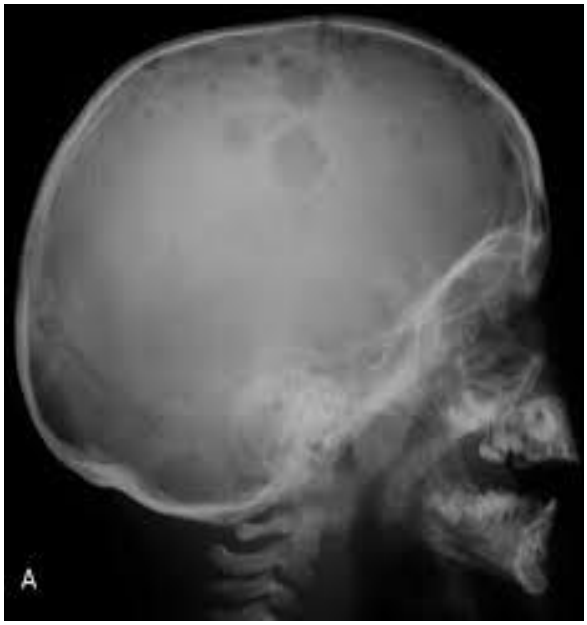

Fig 1. Lateral radiograph of the skull showing multiple osteolytic lesions

Discussion-

Osteolytic skull lesions may have various causes- dermo/epidermic cysts, hemangioma, metastasis, multiple myeloma, Langerhans cell histiocytosis (LCH), Paget disease of bone and fibrous dysplasia. In adults, tumoral causes are predominant - metastasis and myeloma (Tonn et al., 2006), whereas in children, in addition to congenital defects, dermoid cysts, LCH and metastasis from neuroblastoma are the most frequent causes (Neto et al., 2014). The benign lesions have well defined borders with sclerotic margins, mostly near the midline, and are usually solitary. On the other hand, those with a permeative appearance, multiple and randomly distributed, are probably aggressive. The first step in radiological evaluation of the calvarium is plain radiography, where lesions might be evaluated as lytic or sclerotic. It is usually diagnosed with a tissue biopsy, in addition to X-ray and blood studies. A tissue biopsy of an involved site is necessary to make a definitive diagnosis. Imaging is advisable in most of the lesions (Pemmaiah et al., 2015). CT and MRI are complementary methods in determining the nature of calvarial lesions.

Conclusion-

Calvarial tumors in children ranges from benign to malignant disease. So, Calvarial tumors have to be carefully evaluated and surgical excision is usually mainstay of treatment in most of lesions.

References-

1. Neto, N., Horta, M. and Ribeiro, C. (2014) : Lytic lesions of the skull – differential diagnosis. Eur. J. Radiol.
2. Pemmaiah, D. and Bhattacharjee, S. (2015) : Osteolytic Lesions of Skull in Pediatric Age Group. IOSR- JDMS, 14: 68-72.
3. Teseuk, E.W., Szutkowski, Z. and Kawecki, A. (2003) : Langerhans cell histiocytosis of bone - a case report and review of the literature. Journal of Oncology, 53 : 161–164.
4. Tonn, J.C., Westphal, M., Rutka, J.T. and Grossman, S.A. (2006) : Neurooncology of CNS tumors. 570-571.
5. Yalçın, O., Yıldırım, T., Kızılkılıç, O., Hürcan, C.E., Koç, Z., Aydın, V., Şen, O. and Kayaselçuk, F. (2007) : CT and MRI findings in calvarial non-infectious lesions. Diagn. Interv. Radiol., 13: 68-74.