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Extensive heterotopic brain tissue of the face: A review and report of an unusual case

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Summary

An unusual case of heterotropic brain tissue was confused with a malignant tumor of the face in a child. Such lesions are rare, but the diagnosis can be confirmed through frozen section examination. This has made the total excision of the mass possible in our case.

Key words: *Ectopic brain, heterotropic brain, tumor, child*

Introduction

Most reported cases of the heterotropic brain tissue in the newborn involve the nasal area and have been termed as "nasal glioma" [2-4]. Heterotropic brain tissue in the neck, head and nasopharynx have also been reported [3,4,7]. Brain tissue localized to the face seems to be the rarest among these occurrences.

Case report

A one-month old boy was referred to our clinic because of a congenital facial mass. A massive, lobulated tumor appeared on the left side of his face (Figure 1). Cranial x-ray showed lytic defects within the left mandibula. Computerized Tomography (CT) scan demonstrated a solid mass with homogenous appearance and no intracranial extension.

The tumor could be removed in total with preservation of adjacent neurovascular structures. Histopathological examination revealed only brain tissue. The case has been followed for nine months, now. There is no evidence of recurrence of adjacent neurovascular structures.

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Discussion

Brain tissue is rarely found heterotropically [4]. Besides the nasal region [2,4,7] other locations for ectopic brain tissue are much less common and have been described in the pharynx, palate, tongue, orbit, scalp, lung and lips [2,3,5-7].

Malignancy in heterotropic brain tissue has not been reported, but this tissue can cause destruction of surrounding structures [5]. Nasal gliomas may have a fibrous connection to the intracranial space.

This has been shown as evidence in support of separated encephaloceles in the origin of heterotropic brain tissue in this region. The nonnasal gliomas do not have central nervous system (CNS) connection. This favors the two other major theories of origin:

1- Exstracranial separation of an embryonic neuroglia; and
2- Displacement of neuroectoderm multipotential cells during early embryogenesis [7].

Heterotropic brain tissue is of ectodermal origin and should be accepted as a developmental phenomenon. It is non-neoplastic, non-invasive and non-metastatic lesion [3]. Complete excision of heterotropic brain masses is curative.

Preoperative management of a suspicious mass should involve an Magnetic Resonance Imaging (MRI) or CT scan to delineate the extent and possible CNS connections [2]. Heterotropic brain tissue has been reported to recur rapidly after incomplete excision [1,2].

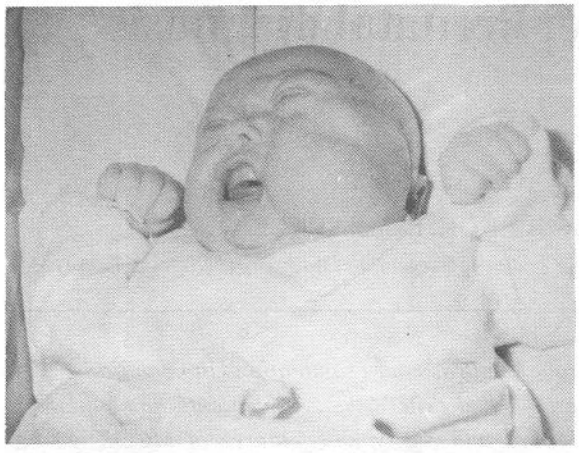

Figure 1. Preoperative appearance of the patient's face.

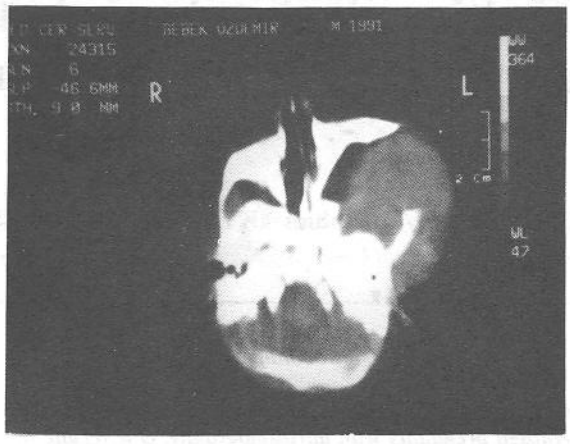

Figure 2. Cranial CT scan demonstrating a mass in the left temporal and infratemporal regions with no communications to the orbita or intracranial structures.

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