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# Immature Cystic Teratoma of the Scalp a Case Report

**Berete I[1,2]*, Diawara S[1], Bah AB[1], Bah MK[1], Chakour K[2] and Chaoui MF[2]**

[1]*Department of Neurosurgery, Donka University Hospital Conakry, Guinea*

[2]*Department of Neurosurgery, University teaching Hospital Hassan II of fez, Morocco*

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***Corresponding author:** Berete Ibrahima, Department of Neurosurgery, Donka University Hospital Conakry Guinea, 85 2ème étage Avenue Ariha Hay Ouafae Narjiss Fès 30000 Fès Maroc, Morocco

**Abstract**

A 34 years old female patient presented with a slow growing scalp tumefaction initially found at her right temple 10 years ago. At first, the size of the tumor was just like a soybean and did not grow obviously in the past nine and a half years. But the tumor increased fast in the last six months, almost as large as a fist. The physical examination showed a spherical tumor located in the right temple near the right ear; the size of the tumor was 5 cm X 4 cm X 3 cm; the surface was smooth, no tenderness, no obvious mobile base, or skull defect. A presumptive diagnosis of scalp cyst or lipoma was made. A complete excision under local anesthesia was made and both histopathologic and macroscopic observation were consistent with an immature teratoma. The postoperative period was uneventful and there was no recurrence at 2-year follow-up. The atypical natural history of this cystic teratoma was considered clinical important.

**Keywords:** Adult; Teratoma; Scalp; Tumors; Congenital

## Introduction

Cystic teratoma, also known as dermoid cysts, are frequently located in the gonads, thymic area and the retroperitoneum [1]. The head is an occasional location of this tumor in the pediatric age but their occurrence on the scalp in an adult is very rare [2]. Although benign, they have a potential for rapid growth, extensive destructive nature with erosion of the cranium and possible intracranial involvement, especially when they have immature components such as hair [3]. They almost always start as a solitary lump on the scalp of a child. This bring a controversy about treating it conservatively with close follow-up or surgically aggressively at an early age to prevent its enlargement and epidural invasion [4]. In this article we report an initially slow growing congenital immature cystic teratoma of the right temporo-occipital scalp for 10 years with rapid enlargement in the late 6-month period and complete excision in a 34-year-old adult.

## Case Report

A 34-year-old right-handed Moroccan lady was referred to our department with a right sided progressively increasing temporal tumefaction for the past 10 years and rapidly growing in the past 6 months. Her past medical history was only significant for hypertension; she never had any prior surgeries. Physical examination revealed a large temporo-occipital mass over the right side of the cranium. It was an immobile, lobulated 5X4X3 cm mass (Figure 1). The surface was smooth, with no tenderness, obvious mobile base, or skull defect. The Neurologic examination was normal. A presumptive diagnosis of scalp cyst or lipoma was made. A Brain MRI Scan demonstrated a multiloculated, heterogeneous cystic mass on the right temporo-occipital region, with calcifications, soft tissue, fat, and fluid components without intracranial invasion (Figure 2). Under local anesthesia we found the lesion located in the subcutaneous tissue layer, involving the galea layer, the skull surface was smooth and complete. We cut the mass and found a cystic cavity sized 5cmX4 cm, which contained gray jerry-built materials, contained oily liquid and a mass of hair, with a complete capsule wall (Figure 3). The lesion was completely removed. Histopathologic examination showed a cyst with squamous epithelium on the capsule lining, containing keratinized material and hair. The pathological diagnosis was an immature teratoma. The patients early postoperative course was uneventful. Post-operative CT and MRI were normal. To date, the patient has survived for 2 years without recurrence (Figure 4).

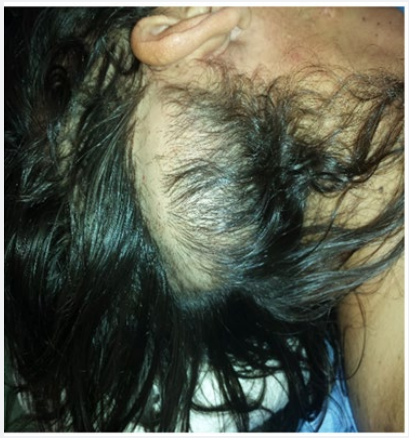

**Figure 1:** The CT scan reveal a well-defined circumscribed hypodense cyst extending from the seller region to the right fronto-basal area on the axial cuts.

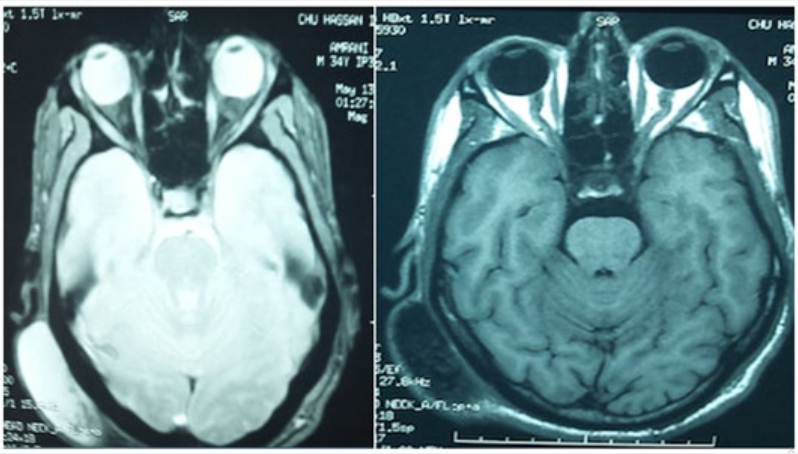

**Figure 2:** The lesion is cystic on the MRI scan without eroding the bone epidural invasion (T1 and Diffusion sequence).

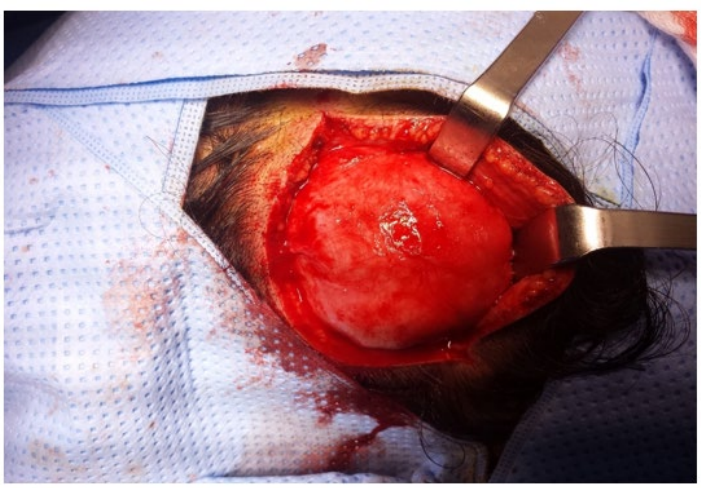

**Figure 3:** The 12-cm cystic teratoma of the ovary prior to excision.



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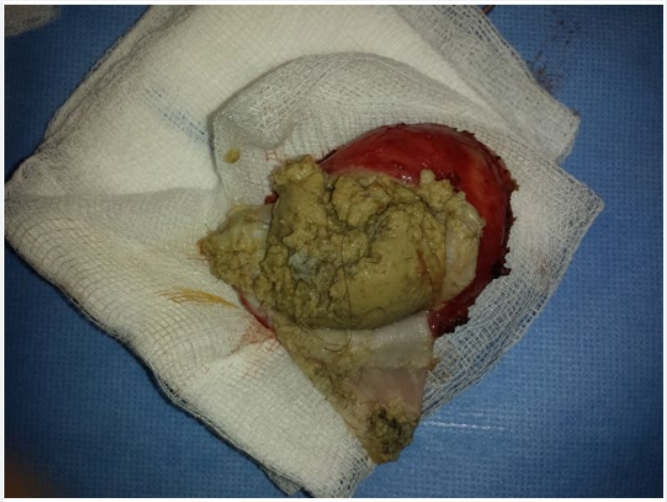

**Figure 4:** The excised cyst, exhibiting immature finding with hair, sebaceous materials, and thyroids tissue.

## Discussion

Cystic teratomas accounts for only 0.4% of all central nervous system tumors [1]. Common locations include the pineal region, followed by the hypothalamic area, the basal ganglia the cavernous sinus and the fourth ventricle [5]. They are more frequent extracranially, where they are believed to occur congenitally or at birth and develops from the entrapment of the surface ectoderm along the lines of embryologic fusion [6]. Teratomas range from benign, well-differentiated (mature) cystic lesions to those that are solid and malignant (immature). The most commonly involved extracranial sites are nasal involving rhenian, periorbital involving zygomaticofrontal suture, intraoral involving floor of mouth, and post auricular [7]. In our case, lesion was involving scalp over right temporal occipital region with no intracranial extension after 10 years of progression. The cysts slowly enlarge at first and remain stable for some time then rapidly grows and become symptomatic because of rupture or infection. Rupture of dermoid cyst occurs spontaneously and in only small percentage, it can present with neurological symptoms before rupture [8]. The cyst didn't rupture in our case. Cranial bone expansion and erosion are rarely seen; however, there is a possibility that they might expand cranial bones laterally [7]. Complete surgical resection of lesion is the treatment of choice. However, keeping in check the risk of structure underneath lesion must be weighed against complete resection [9].

To our knowledge this is the first report of congenital immature cystic teratoma seen at an adult age without intracranial involvement with such an indolent and benign behavior. Our case shows that acceptable outcomes in the context of large immature teratomas can be achieved by early radical resection (early before intracranial invasion and neurologic symptoms). Although recurrence following complete resection is rare, close follow up is highly recommended [10]. In the four reported cases of recurrence in the literature, times to presentation after initial resection were 5, 12, 13, and 66 months [11]. All these cases were pediatric in contrast with our case where the patient was seen at an adult age. At 2 years follow-up there were no recurrence.

## Conclusion

In the management of solitary lump on the scalp of a child, early aggressive surgical management should be performed to prevent enlargement, bone erosion, epidural invasion and rupture that can lead to neurologic symptom. The surgical treatment will also allow a histologic diagnosis, as malignancies and immature features must be considered in the differential diagnosis. Our case is a rare occurrence of immature teratoma with slow growing, benign behaviour until adult age and no recurrence 2 years after complete excision.

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