

Post-auricular Dermoid Cyst: A Case Report

Dr Yogesh TL¹, Dr Anjani Kumar Jha², Dr Devatwisha Ghosh³,

Dr Aggi Susan Samuel⁴

¹(Professor, Dept Of Oral Pathology, Sri Rajiv Gandhi College Of Dental Science & Hospital, Bangalore, India)

²(MDS, Oral & Maxillofacial Surgery And Cleft Surgeon, Private Practitioner, Muzaffarpur, India)

³(Post Graduate Student, Dept Of Oral Pathology, Sri Rajiv Gandhi College Of Dental Science & Hospital, Bangalore, India)

⁴(Post Graduate Student, Dept Of Oral Pathology, Sri Rajiv Gandhi College Of Dental Science & Hospital, Bangalore, India)

Abstract: Dermoid cysts are benign germ - cell tumors containing a combination of different types of tissues. There are various etiologies for origin of dermoid cysts. Clinically dermoid cyst appear as a subcutaneous swelling containing a cheesy material and having a distinct puncta. Three histological variants of dermoid cyst are known. Surgical excision is the best known treatment option so far. These are rare in head and neck region. Very few cases of post-auricular dermoid cysts have been mentioned in literature.

Keywords: Dermoid Cyst, Post-auricular,

I. Introduction

Dermoid cysts originate in the pluripotent germ cells. They form from a single germ cell after the first meiotic division. Dermoid cysts are composed of well-differentiated tissues of at least two of the three types of germinal cells (ectoderm, mesoderm and endoderm). They always contain mature ectodermal tissues (skin, brain), in over 90% of cases they contain mesodermal tissues (muscles, fat, bone, cartilage), and in most cases they also contain endodermal tissues (ciliated, gastrointestinal mucinous or bronchial epithelium, thyroidian tissue)¹

II. Case Report

A 12 year old female patient reported with a chief complain of swelling behind the left ear since birth. On taking history it was found out that the size of the swelling was relatively constant after birth which did not grow much. The swelling was not painful. There was no discharge from the swelling as well and no rise in body temperature was reported.

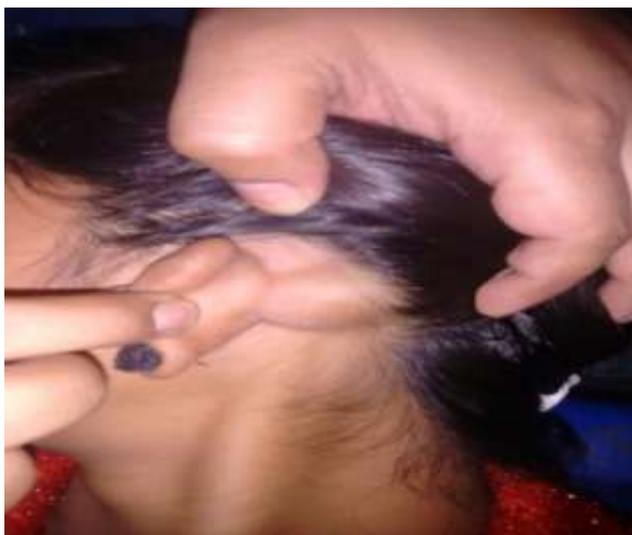


Figure 1 : Extra-oral picture showing swelling behind the left ear

On inspection a well-defined swelling in respect to the left post-auricular region was noticed which was attached to the mucosa. On palpation the swelling was soft in consistency, the base was fixed and was non-tender in nature. Based on the clinical details a provisional diagnosis of dermoid cyst was given. Differential diagnosis of epidermoid cyst and sebaceous cyst were given.

The cyst was excised and sent for histopathological evaluation. The tissue specimen was grossed, fixed in 10% normal buffered formalin, manually processed, sectioned and stained with haematoxylin and eosin (H&E)



Figure 2 : Picture showing grossing details of the specimen



Figure 3 : Picture showing specimen cut into 2 halves containing hair follicles

The soft tissue specimen stained with H & E showed the presence of a cystic lumen with a thin layer of orthokeratinized stratified squamous surface epithelium with minimal connective tissue. The epithelium was 2-4 layer thick with prominent granular cell layer. Adnexal structures were seen in the fibrous wall. Few keratin flakes were also seen. The stroma consisted of loose irregularly arranged collagen fibers with fibroblasts. Vascularity was moderate.

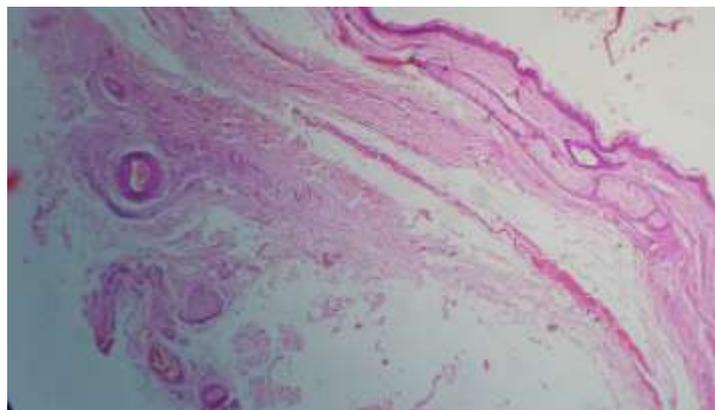


Figure 4 : H & E stained soft tissue section under 4X showing epithelium and connective tissue

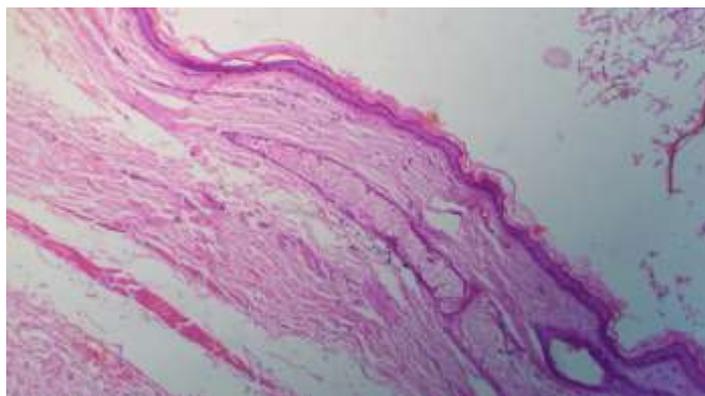


Figure 5 : H & E stained soft tissue section under 10X showing orthokeratinized stratified squamous epithelium with underlying connective tissue showing adnexal structures

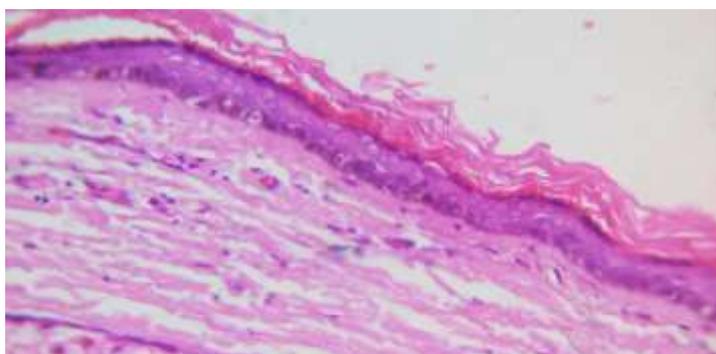


Figure 6 : H & E stained soft tissue section under 40X showing thin orthokeratinized stratified squamous epithelium (2-4 layers thick)

Based on the histopathologic features a final diagnosis of dermoid cyst was given

III. Discussion

Dermoid cysts are benign germ - cell tumors containing a combination of different types of tissues, and often parts or whole bodies. Each of the tissues that form the human body is made up of cells and intercellular substance. Tissues do not exist in isolation, but through each other metabolic relations build organs and systems of the body during ontogeny. During embryonic development tissues take certain place but sometimes they can be combined in different proportions and in different parts of the body. Thus, the mix of tissue formed as such derived from different embryonic structures serve to store a dermoid cysts.²

Theories of etiology of dermoid cysts:

- i) Congenital inclusion of dermal and epidermal elements of germ layers in deeper tissues along the embryonic lines of fusion.
- ii) Acquired traumatic implantation of dermal and epidermal elements of surface epithelium, which may proliferate and keratinize.
- iii) Growth from rest of totipotent cells displaced from the blastomere.

Dermoid cysts are relatively uncommon in the Oral and Maxillofacial region, accounting for just 2-7% of all dermoids and comprising about 34% of all developmental cysts of the head and neck. In this region they are mostly found in the periorbital lateral eyebrow area, the “orbital dermoid cysts”, followed by the submental region, the “submentaldermoid”, external to the mylohyoid muscle or in the floor of the mouth, the “sublingual dermoid”, oral to the mylohyoid muscle. Others are the “nasal dorsum dermoid cysts” arising from inclusions between the developing nasal bones.³

Although floor of the mouth in the midline is most favoured site, occasional occurrence involving the buccal mucosa, tongue, lips, uvula, temporomandibular joint dermal graft, intradiploic, intracranial, and intraosseous location within the mandible and maxilla also have been cited in literature (Koca et al., 2007; Hemaraju et al., 2004; Shear and Speight, 2007). These lesions show variation in size and weight from few millimetres to centimetres and a gram to several hundred grams respectively (Teszler et al., 2007; Pancholi et al., 2006).³ Longo and others found that men are affected more often than women in the ratio 3:1, with mean age 28 years.⁴

Clinically it may present as a round, firm, mobile flesh colored to yellow or whitish subcutaneous nodules of variable size. A central pore or punctum may be noticed. A thick cheesy material may be expressed. In a study from Indian population, 63% of the cysts showed melanin pigmentation.⁵

There is always a difficulty of making a correct diagnosis of these lesions when using clinical examinations and conventional radiography. To achieve a correct diagnosis and to develop correct surgical strategy it is recommended that specialized imaging examinations such as ultrasonography (US), computed tomography (CT), Magnetic Resonance Imaging (MRI) and histopathological examination should be carried out.⁶ We have three histological variants of the dermoid cyst namely:

1. Dermoid cyst
2. Epidermoid
3. Teratoid

Skin adnexa in the cyst wall are found in a dermoid cyst. A simple squamous epithelium lines the epidermal cyst, whereas, a teratoid cyst consists of tissue derived from all three germ layers. They may contain cheesy keratinous material.

Histologically, the dermoid cyst is lined by a thin, uniform orthokeratinized stratified squamous epithelium that can be ulcerated and associated with secondary inflammatory reactions including focal foreign body type granulomatous reaction to the keratin contents. The cyst contains keratin rich sebum material admixed with occasional hair; the dermoid cyst wall characteristically contains skin adnexal structures including hair follicle, sebaceous & sweat glands. They express cytokeratins 1 and 10, constituents of the suprabasal layers of epidermis. The source of this epidermis is infundibulum of hairfollicle, as the lining of these two structures are similar.^{5,7,8}

Total surgical excision, for the treatment of dermoid cysts, reduces the risk of recurrence. The prognosis of dermoids in the head and neck region is favorable. Malignant transformation in a longstanding dermoid cyst is a rare complication. About 5% of dermoid cysts undergo malignant degeneration into squamous cell carcinoma.⁹

Dermoid cysts around the auricular region are rare, whereas those located in the postauricular area are extremely rare. To the best of our knowledge, there have been very few cases of postauriculardermoid cyst described in literature. In Korea, only three cases of postauriculardermoid cysts have been reported in the past. Moon et al. further described a single case in 2005 and Sung et al. described three cases of dermoid cysts of the auriculotemporal area in Korea in 2009. Pankaj et al. described a case of unilateral postauriculardermoid cyst in an 18yearold boy in 2007 in India. Ho et al. and Mohammad et al. , reported a postauricular lump recently in 2011.¹⁰

References

- [1]. Moş C. Ovarian dermoid cysts: ultrasonographic findings. *Medical Ultrasonography* 2009; 11(4), 61-66
- [2]. Krastev S D, Filipova I. Embryology Of Dermoid Cysts With Neuro-Ectodermal Content. *JIMAB* 2013; 19(1): 405-407
- [3]. Jeyaraj PCW, Sahoo NKB. A case of an unusually large Sublingual dermoid cyst of the maxillofacial region. *J Dent Med MedSci* 2012; 2(2): 19-25
- [4]. Jham BC, Duraes GV, Jham AC, Santos CR. Epidermoid cyst of the floor of the mouth : A Case Report. *J Can Dent Assoc* 2007; 73(6): 525-528
- [5]. Sunil S, Oommen N, Rathy R, Rekha VR, Raj D, Sruthy VK. Epidermoid cysts of head and neck region - Case series and review of literature. *Int. J. Odontostomat* 2014; 8(2):165-169
- [6]. Sahoo NK, Choudhary AK. Dermoid Cyst of Floor of Mouth: A Case Report. *NJMDR* 2012; 1(1): 24-30
- [7]. Bodbaj MA, Al-Ibrahim K, Chopra R, Al-Ibrahem A. Unilateral Dermoid Cyst of the Floor of the Mouth. *Scientific Journal of King Faisal University (Basic and Applied Sciences)* 2011. 12(2); 183-190
- [8]. Dhanasekaran SV, Senniappan S, Radhakrishnan S. Dermoid cyst of floor of the mouth: A case report. *Muller J Med Sci Res* 2015;6:86-8
- [9]. Erdogan S, Topdag M, Vural C, Sari F, Ozturk M. Unexpected Localization Of Dermoid Cyst: In Preauricular Region. *ActaMedicaMediterranea* 2014; 30: 101-103
- [10]. Tiwari R, Sangole V. Recurrent postauriculardermoid cyst: A case report. *IICRI* 201 3;4(8):41 5–41 8.