



A GIANT DERMOID OF FOREHEAD – IGNORANCE BEING THE IMPEDIMENT

General Surgery

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ABSTRACT

Introduction: Dermoid cyst is a rare entity caused by the epithelial cells' inclusion along the lines of embryonic fusion. Dermoids can occur anywhere on the skin although they are seen often in the head and neck regions. It is a clinically diagnosed but imaging might be required in certain cases especially to rule out the possibility of an intracranial connection. Surgical excision to prevent complications is followed. **Case Report:** Here, we present the case of a 65 years-old man with a swelling in the forehead on the outer canthus of left eye. Usually, dermoids are 3 to 4 centimetres in size but our patient had a huge swelling that dates back to his childhood possibly congenital. After confirming the diagnosis and a CT scan which did not show any gross bony erosion the lesion was surgically removed without any complications. It was histologically proven to be a dermoid. **Conclusion:** Dermoids though present during young age the possibility of a dermoid should be considered even in older adults based on clinical findings and we should be wary of intracranial extension before excising.

KEYWORDS

Dermoid cyst, Giant, head and neck, bony indentation, intracranial extension

INTRODUCTION:

Roser, in 1859 first described dermoid cyst [1]. Dermoid cyst is formed due to the entrapment of layers of skin in a deeper plane during fusion of embryonic tissues. Hence, they occur usually in midline, outer canthus of eye, and posterior aspect of ear as these are the areas of fusion lines. Even though these are congenital the patients often present late because they are small at birth and are often overlooked. So usually boys/girls or young adults are the ones who present with dermoid cyst. They are lined by squamous epithelium and involve different kinds of skin-related structures such as multiple sebaceous glands, hair follicles, sweat glands, fat, nail, dental, cartilage or bone structure. Dermoid cysts are often benign as they contain mature tissue. Squamous cell carcinoma in adults and endodermal sinus tumour in children are some rare malignant forms of dermoid cysts.

What we have described till now is the 'Sequestration dermoid' that typically occurs due to defect in embryogenesis. The other form is 'Implantation Dermoid' which occurs in adulthood especially in farmers, gardeners and tailors due to thorn or needle prick which leads to dermoid cyst in fingers and foot. This is an acquired form. Sequestration dermoid are cystic, fluctuant with transillumination negative swellings. Sometimes as the person ages, the dermoid cyst might form an indentation in the bone which can be felt as a depression on palpation. There are few occurrences of dumb-bell shaped tumours if the dermoid is present over the skull bones there might be an intracranial extension. One should suspect this in a long-standing case or the ones with bony indentation and do appropriate imaging to rule this out. So, no dermoid cysts should be taken lightly but needs discretion before any intervention. This case report will reiterate the value of a systematic approach.

CASE PRESENTATION:

Sequestration dermoid cysts are usually small to medium sized that often come to limelight in teenage years or young adulthood. Large dermoid cysts are quite rare. Here we present a 65 years old gentleman who had a swelling in the left side of forehead which started in the childhood with epicentre from the outer canthus of the left eye. He was a farmer by occupation and he was reluctant as well as had resource constraints to reach out to medical institutions. The swelling started to grow slowly and steadily over the years. It was painless. Dermoid cyst, lipoma, and sebaceous cyst were considered under differential diagnosis of this lesion. On examination the swelling located with epicentre at the outer canthus of the left eye, measured 10x8cms, ovoid, tensely cystic, fluctuant and transillumination negative. There was no punctum [Figure1,2]. It had a minimal bony indentation all

around on the frontal bone. So, we took a computed tomography (CT) scan which demonstrated a well- defined and hypodense soft tissue mass in the superficial plane of left side of forehead [Figure 3]. Most importantly there was no intracranial extension. Based on these findings and clinical presentation, a diagnosis of Dermoid cyst without intracranial extension was made. There were no swellings in the other areas of the body. Even though it was disproportionately large it did not affect the vision in the left eye but off late he has found difficulty in opening the upper eyelid of left eye and that was the reason that made him seek medical attention.

The swelling had existed without any complication for nearly more than 50 years was surprising. We explained him the need for surgery and it can be performed with minimal morbidity. He was a chronic smoker and had severe Chronic Obstructive Pulmonary Disease (COPD). So, after optimising him, under general anesthesia with a curvilinear incision over the dome of the cyst, flaps were raised and the sac dissected in toto. Due to the chronicity, it was firmly attached to the periosteum of the frontal bone which was meticulously dissected off. In order to prevent recurrence, the total removal of the dermoid cyst is necessary so that no residual cyst tissue is left behind and we achieved that even though the swelling was large. Closure was done in layers and the wound healed in eight days. The cyst was sent for histopathological examination which revealed it to be a dermoid cyst. The cyst had large amount of a cheese-like keratinous substance. There were no surgical complications except for the edema in the left eyelid which settled with anti-inflammatory agents. The patient recovered without complaints and was very pleased with the aesthetical results. One year after treatment, the patient is still in follow-up with no evidence of recurrence.



Figure 1: Large dermoid cyst at outer canthus of left eye measuring 10 x 8cms



Figure 2: Large dermoid cyst was causing difficulty in vision

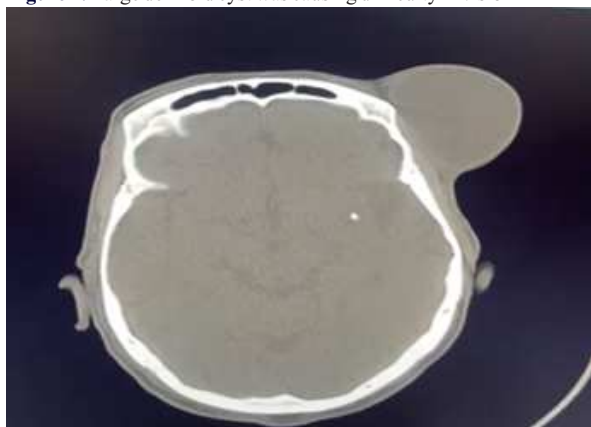


Figure 3: CT scan showing no bony erosion or intracranial extension



Figure 4: Intra operative image of the lesion

DISCUSSION:

The term dermoid cyst is used to denote a group of lesions with similar clinical features, but differentiated according to its histological aspect: epidermoid, dermoid or teratoid cyst [2]. The original dermoid cysts are lined by epidermis with the presence of dermal appendages, such as sweat glands, sebaceous glands, and hair follicles, whereas the epidermoid cyst is also lined by epidermis, but without the appendages [3,4]. The teratoid cysts are rare in head and neck region. They often occur in the ovary where elements from the three germ layers, ectoderm, mesoderm and endoderm are present [4]. The various locations of epidermoid cysts are in the face, neck, scalp, extremities and trunk. Sometimes it can be found intra-orally also, like in floor of the mouth. Based on the pathogenesis, dermoid cysts are classified into congenital and acquired. Congenital cysts are dysembryogenic lesions which arise from ectodermal elements trapped in between, at the time of midline fusion, of the first and second branchial arches in the third and fourth week of the intrauterine life. Acquired cyst are derived from traumatic inclusion of epithelial cells in the connective tissue; later these cells may differentiate to form cyst [5]. It was first noticed by Werhner in 1855 and was referred to as 'Implantation cyst' by Sutton in the year 1895 [6-7]. Though both the genders are affected there is a predilection in males. The male to female ratio is 3:1 [1,8]. Dermoid cysts contain a central core of keratin proteins, desquamating cells,

cholesterol, and lined with stratified squamous epithelium. Dermoid cysts are usually asymptomatic; however, it can get infected and cause symptoms and signs of inflammation.

In infants, they are usually found as subcutaneous masses throughout the embryonic skin fusion lines. The commonly occurring regions are periorbital (zygomaticofrontal suture), nasal (frontonasal suture and rhinion), intraoral (floor of the mouth) and postauricular region [9,10]. Some studies denote that 7% of dermoid cysts occur in the craniofacial region [11].

Head and Neck dermoids are divided into three subgroups based on location as the frontotemporal region, occipital and nasoglabellar region by Bartlett et al in 1993 [12]. Dermoid cysts on the frontotemporal region are the most common subgroup and they are located in the periorbital region in 75.8% of the cases and out of which lateral of eyebrow in 75.8% of the cases and in 3.4% of the cases on medial canthal region. Bone erosion can be seen in dermoid cysts especially which is located on the periorbital region. In a study by Sathananthan et al., which included 70 patients, bone erosion was elucidated in 87% of the patients and whole layer bone defect was detected in 34% of them [13]. Ultrasound, CT and MRI may be used judiciously to gain more information on the cyst extension that allows optimal treatment planning [14]. Ultrasound is the first choice of investigation because of its feasibility, low cost and efficacy. Some authors consider Computerised Tomography scan (CT scan) for assessing cyst extent especially the bone erosion. This was used in our study which showed no bony erosion or intracranial extension. Magnetic Resonance Imaging (MRI) may be necessary in select cases [15].

The definitive treatment for dermoid cysts is surgical excision, which depends on the location, size, nearby structures and symptoms associated. Aim is to completely remove the lesion without damage to adjacent neurovascular structures. There are two schools of thought, one advocates radical excision of the lesion to prevent recurrence, and others advise more of a conservative approach to minimize morbidity and mortality. We suggest an optimum method where no remnant of cyst wall is left behind. During Surgery adequate care should be taken not to rupture the cyst, as cystic contents will act as irritants to fibrovascular tissues, causing postoperative inflammation [7]. The dermoid cysts rarely harbour malignancy but they do. The occurrence of Squamous cell carcinoma and Basal cell carcinoma, has been reported from dermoid cyst in few studies [16]. Dermoid cysts are excised not only for cosmetic reasons, but also for prevention of secondary infection, bone erosions and rarely malignancies. While in children the other differential diagnosis like encephalocele should be thought before blindly excising. Although the treatment of dermoid cysts is surgical, surgical planning should be performed only after a thorough physical examination and radiological examination are completed as it will prevent mishaps.

CONCLUSION:

Dermoid cysts have myriad presentations and needs thoughtful management. It should be dealt in childhood itself to prevent complications. It is unfortunate that some individuals ignore it and this patient brings the debate that still health education and awareness has a long way to go at least in developing countries.

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