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Cosmetic surgery of external auditory canal nevus

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ABSTRACT

Epidermal nevus is a noncancerous growth that causes severe deformities by causing epidermal and adnexal tissue development. Germline mutations in the FGFR3 gene are thought to cause epidermal nevus. Dermatologists are often consulted for treatment in the identification of the lesion based on its clinical appearance. Based on the patient's situation the doctor must select any one of the best treatment options. This case involves the surgical removal of epidermal nevi in the EAC by an ENT professional. Patients with ILVEN seek medical therapy for both pain alleviation and aesthetic concerns because of the disease's severe and unrelenting symptomatology. Topical medicines, dermabrasion, cryotherapy, laser treatment, and partial-thickness excision have all been investigated. Unfortunately, no one therapy has consistently been found to be effective. Medical therapy is usually unsatisfactory since results are often transient. Surgical therapies have been demonstrated to be more beneficial in terms of symptom reduction, but they come with a significant risk of scarring and recurrence.

Keywords: Epidermal nevus, Topical medicines, dermabrasion, cryotherapy, laser treatment, and Partial-thickness excision

1. INTRODUCTION

Epidermal nevus is a benign (non-cancerous) skin lesion produced by aberrant skin cell growth (plural: nevi). It usually appears at birth or develops during early childhood before puberty. These hamartomas, which can cause serious deformities, are characterized by the development of the outer layer of skin and tissue masses (Brandling-Bennett and Morel, 2010). They are either keratinocytes or hyperplastic adnexal structures in nature, such as oil glands, sweat glands, and hair follicles. These can range from a single lesion to a massive cluster. Based on the level of defect it is classified as Epidermal, dermal, and subcutaneous, and based on the component cell it is classified as vascular, connective tissue, and melanocytic (Panagiotopoulos et al., 2009).

The location of lesions or the major histologic cell type distinguishes the tumor and its subpopulations: keratinocyte- verrucous epidermal nevus, sebaceous gland-nevus sebaceous, pilosebaceous unit-nevus comedonicus, eccrine gland-eccrine nevus, or apocrine gland (apocrine nevus, apocrine nevus) (Hafner et al., 2006). Keratinocyte nevi, also known as verrucous epidermal nevi, are a common kind of epidermal nevus (Cassetty and Leonard, 2003). They are most common throughout childhood or infancy, and their frequency may rise as the kid grows older. On the skin, the nevus appears as verrucous

papules that combine to form brownish verrucae (Levenberg et al., 2006, Kim et al., 2000).

Prevalence

Epidermal nevi afflict both men and women equally, and one in every 1,000 live births is affected. In general Organoid nevus syndrome is disorders in which one-third of those that have epidermal nevi also have organ system involvement. Up to 10% of persons with epidermal nevi are thought to have extra syndrome symptoms. Epileptic seizures, mental impairment, eyesight problems, bone deformation, and neuron loss are all prominent symptoms of this illness, which generally appears before birth (Happle et al., 2004).

A post-zygotic change is hypothesized to fill in a skin region that would typically produce Blaschko's lines (Brandling-Bennett and Morel, 2010). Mutations occur in around 30% of persons with keratinocyte epidermal nevi. The majority of epidermal nevi are caused by unidentified quality changes. The charges associated with these skin lesions seen only in the cells of the nevus. Mosaics are people that have an epidermal nevus and have undergone a change.

The FGFR3 quality provides guidance to proteins such as growth factor receptors. This gene is involved in a variety of natural cycles, including skin cell growth and division. Cell growth and development were stimulated by interactions with outside cell layers by FGFR3 protein. At the point when these development factors join the FGFR3 protein, it is initiated, which sets off a chain of compound responses for natural functions as the development of cells. Even in the absence of a development factor, the most well-known FGFR3 gene change in epidermal nevi activates the FGFR3 protein, which is continually dynamic. Normal cells reproduce and develop faster than FGFR3-transformed cells.

Cells with rapid gene changes do not undergo apoptosis (self-destruction) as quickly as normal cells. Overgrowth of skin cells occurs as a result of these processes, resulting in epidermal nevi (Brandling-Bennett and Morel, 2010; Vidaurri-de la Cruz et al., 2004; García-Vargas et al., 2008). The expansion of keratinocytes causes epidermal naevi, which are the most common skin lesions.

Types of Epidermal nevus

Linear epidermal naevus: Epidermolytic epidermal naevus; Hailey-hailey or darier disease (Figure 1). An organoid naevus is a skin lesion in which another component of the skin is prominent.

Figure 1 linear epidermal naevus

2. CASE HISTORY

A 21-year-old woman arrived at the ENT OPD at Sree Balaji medical college and hospital with a lesion in her left ear. The lesion had been there from birth and had gradually grown in size until it reached its current size (Figure 2). There has been no pain, drainage, or discomfort from the lesion location in the past. No previous history of hearing loss or ear blockage. The patient wishes to have it removed for aesthetic reasons. There has never been a case of DM/HTN/TB/BA. There have been no other problems in the family.

Figure 2 Pre-op picture of Nevus sebaceous

Local examination

Ear

Tragus lesion spreading into the External auditory canal, measuring 2 x 4 cm; It was dark in hue and had a rough texture. There was no warmth or tenderness. Sinuses aren't draining. There are no lymph nodes in the area that can be felt, Normal in the postauricular area and intact tympanic membranes on both sides. A broad check of the body revealed no additional body parts with comparable abnormalities.

Procedure

Following the patient's agreement, she was scheduled for excision (Figure 3) under the LA Routine Blood Investigation, X-ray chest, and ECG, all of which were normal. It was possible to achieve pre-anesthetic fitness. The patient moved to OT, where parts were painted, draped, and placed in place. A 2cm linear incision was made anterior and parallel to the tragus, as well as along the lesion's boundaries. The nevus, as well as a 0.5cm border of normal tissue, was lifted and removed together with the skin and subcutaneous tissue. After raising sections of the EAC skin, pieces of the nevus extending into the external auditory canal were excised. The tragus and neighboring skin, as well as the ear, are liberated from the overlying skin. To guarantee the aesthetic quality, the anterior and most prominent section of the tragal cartilage is removed after full excision of the nevus. The skin was sutured along the tragal prominence's edge to reduce the scar's prominence (Figure 4 and 5). The secondary aim allows EAC skin to recover. The patient was dressed and sent to the ward. After one week, the surgical seams were removed, and the postoperative phase was uncomplicated (Figure 6).

Figure 3 Steps of excision - removal of the lesion with underlying skin

Figure 4 Sutured with Ethilon 3-0

Figure 5 Post op excision

Figure 6 Post op picture

Histopathology report

According to the histological investigation, the epidermis displayed hyperkeratosis, acanthosis, papillomatosis, and horn cysts with basal cell proliferation. A few abortive hair follicles are directly attached to the epidermis, indicating sebaceous hyperplasia in the underlying dermis. There are a few apocrine glands, as well as cartilaginous tissue in the area (Figure 7).

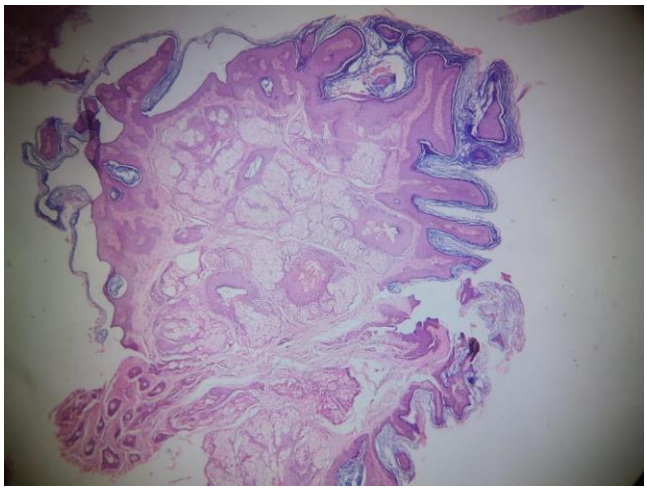

Figure 7 Histological slide showing Nevus sebaceous with basaloid cell Hyperplasia

3. DISCUSSION

Skin lesions are a pruritic, linear plaque that most often occurs on a limb during development. Unna originally documented inflammatory skin lesions in 1896, and Altman and Mehregan classified it as a discrete entity in 25 instances in 1971. ILVEN is a clinical and histopathologic variant that is usually inflammatory or psoriasiform, according to the researchers. This affects around 5% of people with skin lesions. Epidermal nevi can be seen in all six disorders reported thus far. Some instances include Proteus syndrome, phakomatosis pigment-keratotic, sebaceous nevus, Becker's nevus, and nevus comedonicus (Eisen and Michael, 2009).

Happle et al., (2004) revealed that the oral mucosa contribution is very uncommon because of its presence in the Head. Only 11 instances of the oral association have been described in clinical writing since Brown and Gorlin's unique investigation, which discovered 24 people with keratitis. So far, only three examples of pure oral localization have been documented. It's difficult to get rid of epidermal nevi. There have been several pharmacological and surgical therapies investigated, but no one-size-fits-all solution has emerged. In some cases, occlusion or injection of corticosteroids, as well as topically applied Tretinoin cream, may be beneficial. Although long-term monitoring is required, oral retinoids, a kind of medication, may be beneficial in the treatment of extensive epidermal nevi. Surgical excision is the most common therapy for skin lesions. When employing superficial removal approaches, recurrence is common. Although more intense therapies are more successful, they are associated with a higher risk of scarring following surgery.

Surgical ablation usually results in scarring, thus it's mainly used for minor lesions (Kim et al., 2000 and Vidaurri-de la Cruz et al., 2004). Dermabrasion has been linked to a considerable incidence of recurrence, particularly superficial dermabrasion, and

profound dermabrasion can enlarge scars. Late healing, infection, edema, and an unexpected change in skin color are all dangers and adverse effects of cryosurgery. Lasers have been used to treat epidermal nevi for decades. Because of laser technology, simplicity, precision, and welfare have all improved. Several safe and successful approaches for treating epidermal nevi have been developed using Carbon dioxide, long-pulsed Nd: YAG, and pulsed dye lasers of 590 nm. Pulsed dye lasers with a wavelength of 585 nm. Epidermal nevi affects months or even years after they have been treated (Moss et al., 1999).

We used surgical excision with a margin to eliminate recurrence while conserving the ear architecture in this case. Regrettably, no one treatment has consistently proven to be effective (Lee et al., 2011 and Micali et al., 1995). Medical treatment is frequently ineffective since the effects are generally transient. Surgical therapies have been demonstrated to be more successful in terms of symptom reduction, but they are associated with significant scarring and a high recurrence rate.

4. CONCLUSION

This case brings to light the incidence of such cases which pose medical/ surgical challenges, due to their recurrent nature, precarious location as well as cosmetic requirements. From our experience of epidermal nevus excision, we were able to excise the whole lesion preserving the cosmetic appearance of the ear, and leaving a minimal scar. Even though recurrence is common as given in dermatology textbooks in epidermal nevus, we have excised the lesion with a margin of normal skin to prevent this whilst also giving excellent cosmetic results.

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Author's contribution

Rajasekar: Data collection, preparation of the manuscript; Meenakshi: Preparation of manuscript, statistical analysis; Jayapreetha and Mary lily: Statistical analysis, data interpretation, and correction of the manuscript.

Informed Consent

Written & Oral informed consent was obtained from the patient in case report.

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Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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