INTRODUCTION

Nevus comedonicus (NC) is a type of epidermal nevus which presents as numerous closely set pits filled with keratinous material that resembles comedones. It may present at birth but is more commonly seen during childhood or adolescence. It is suggested that it is a rare type of epidermal nevus with an estimated prevalence ranging from 1 in 45,000 to 1 in 100,000. In general, the lesions are arranged in groups or follow a linear pattern along the Blaschko’s lines on the face, neck, trunk, and upper extremities. NC of the scalp is a rare entity.

Herein, we are reporting a case of NC on the scalp in a 14-year-old boy.

CASE REPORT

A 14-year-old boy presented with an asymptomatic hairless patch on scalp which was present since birth, of peanut size and gradually increasing to the present size. It was not associated with any other congenital anomalies. There was no family history of similar type of lesion. On examination, a patch of alopecia of size 6 cm × 3 cm was present over the right side temporal region of the scalp which was studded with multiple discrete pits filled with keratinous material and comedo-like lesions. In the center of the lesion, there was a dilated cribriform pit and surrounding the skin was normal. There was no evidence of any other physical, mental, and cutaneous abnormalities.

Routine hematological investigations were within normal limits. Mantoux test done to rule out scrofuloderma was found to be negative. Skin biopsy was done for histopathological examination with the differentials of NC and folliculitis decalvans. In histopathological examination under low-power field, epidermis showed hair follicles invagination filled with keratin resembling dilated hair follicles. Dermis showed rudimentary hair follicles and sebaceous gland lobules. High-power field of same histopathological slide showed large hair follicles containing lamellated keratin but absent hair shaft. Thus, on the basis of histopathology and clinical examination, a diagnosis of NC was made, and the patient was started on topical tretinoin 0.05%. After 6 months of applications,

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he had no comedo-like lesion and then the patient was planned for surgical excision of the lesion.

**DISCUSSION**

NC is a hamartoma of pilosebaceous unit, resulting in a lesion that is unable to produce mature hairs, matrix cells, or sebaceous glands and capable of forming soft keratin, which results in dilated follicular orifices. Usually, the lesions are asymptomatic although itching has been reported. They may be present at birth or develop during childhood. There is no gender predilection. NC is thought to be sporadic although familial cases have been reported in the literature. Sometimes, it is also associated with developmental defects of central nervous system, eyes (ipsilateral cataract), bone, and skin (extensive nevus flammeus and perforating elastoma). When it is associated with other developmental anomalies, it is called NC syndrome. It may be associated with cyst formation, bacterial infections, drainage, fistula formation, and scarring, which is an inflammatory variant of NC.

The most frequently affected sites are face, neck, trunk, and upper arm. Rarely, lesions of NC have been reported on the scalp, palms, sole, and genitalia. Till date, there are only a few case reports of nevus sebaceous on the scalp and all of them were without any associated developmental anomalies. Ghaninezhad et al reported NC on scalp in a 3-year-old boy. Another case of NC on scalp was reported by Sikorski et al in a 16-month-old male child, who presented with intermittent “discharge” from the lesion. Subsequently, Kikkeri et al reported a case of NC arranged linearly on the scalp in a 33-year-old male.

There was a positive family history of the similar lesion on the similar site. As such, this case is being reported for its sheer rarity of its presentation.

Usually, it has a benign course of disease. Most of the lesions grow proportionately with age but may increase in size after puberty. They are usually stabilized in both size and number by late adolescence. However, close monitoring of these patients is required as squamous cell carcinoma or basal cell carcinoma may arise from the lesions of NC. Differential diagnosis of NC on scalp includes folliculitis decalvans and nevus sebaceous. Folliculitis decalvans, nevus sebaceous, and NC can be differentiated on the basis type of clinical presentation and histopathological examination [Table 1].

The purpose of management is for cosmetic reasons and for treating superadded infection or malignancy. The various modalities of treatment include topical, systemic, and surgical treatment. Topically, retinoids, 12% ammonium lactate, and salicylic acid may help to improve the cosmetic appearance. Topical tacalcitol and tazarotene 0.05% with calcipotriene 0.005% daily have also been found to be effective. For lesions with cyst formation or recurrent inflammation, topical antibiotics, oral antibiotics, intralesional corticosteroid injections, or oral isotretinoin may be given. Surgical excision may be performed for localized lesions, cosmetically disfiguring lesions, or severe cystic disease.

In conclusion, we are hereby presenting a sporadic case of NC on the scalp. Atypical site of presentation of NC on
**Table 1: Difference between nevus comedonicus, nevus sebaceous, and folliculitis decalvans**

|                          | NC                                      | Nevus sebaceous                                      | Folliculitis decalvans                                |
|--------------------------|-----------------------------------------|------------------------------------------------------|------------------------------------------------------|
| **Age of presentation**  | Half of the NC cases present at birth, and half present in childhood, usually before age 10 | Usually noted at birth, but the characteristic feature develops after puberty | Reported primarily in individuals of 4th and 5th decades of life |
| **Clinical presentation**| NC presents as numerous closely set pits filled with dark keratin plugs resembling comedones | At birth → appears as a bald patch. In adolescence → becomes verrucous and nodular. Later in life → appendageal tumors may develop | Initially presents as painful follicular pustules that become crusted. A patch of alopecia develops resulting in central area of scarring |
| **Histopathological examination** | Rudimentary pilosebaceous follicle is present, with a large overlying keratin-filled crater. The surface of keratinous material oxidizes to form comedo-like appearance | Epidermis shows papillomatous hyperplasia. In dermis, the number of mature sebaceous glands is increased | Epidermis shows hyperkeratosis with parakeratosis. Dermis shows mixed inflammatory infiltrate including lymphocytes, plasma cells, and neutrophils |
| **Treatment**            | Topically retinoids, salicylic acid, or ammonium lactate may be given. Disfiguring lesions may require surgical excision | Full-thickness surgical excision is preferred | It is mainly aimed at eradicating *Staphylococcus aureus* by prolonged course of dicloxacillin or flucloxacillin, antiseptic shampoo, and topical clindamycin |

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the scalp led us to report this case, so as to sensitize the dermatologist about its presentation which might help in early diagnosis and treatment.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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