PILOnidAL SinUS OF NOSE – A DIAgnOSTIC DiLEMMA

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PILOnidAL SinUS OF NOSE – A DIAgnOSTIC DiLEMMA (Abstract): We report an unusual case of pilonidal sinus of the nose, which presented to us as a diagnostic dilemma. Our initial differential diagnosis of a nasal dermoid was overruled by histopathology of the surgical specimen. We discuss the etiological possibilities, the pathogenesis and the histopathological characteristics of a pilonidal sinus occurring over the nasal dorsum.

KEY WORDS: PILONIDAL SINUS, NASAL DORSUM, NASAL DERMOID

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INTRODUCTION

Pilonidal sinus (Latin pilus = hair; nidus = nest), a term first used by Hodges in 1880, is a lesion that arises in the midline, in a skin dimple, in relation to the tip of the coccyx. Though the post-anal region is the commonest site of occurrence of this lesion [1], it has occasionally been reported from other sites [2]. The occurrence of this lesion in the nasal pyramid is very rare, and leads to difficulty in clinical distinction from a nasal dermoid. Here we report a pilonidal sinus occurring over an unusual site – the nasal dorsum.

CASE REPORT

A 20 year old male presented with history of a swelling over the nasal dorsum since birth. This swelling was associated with discharge and extrusion of hairs from a sinus opening (Fig. 1).

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Fig. 1. Clinical photograph of the patient showing a sinus opening over the nasal dorsum with protrusion of hair.
The lesion was excised by a local general practitioner, in early childhood. After excision, the lesion persisted, with intermittent episodes of infection. During adolescence, there was an increase in the number and length of hairs extruding from the sinus opening. Patient used to frequently trim the hair to avoid social embarrassment.

His general health was otherwise good. Local examination revealed a deformed external nasal pyramid, with splayed nasal bones. A sinus opening of 2 mm was seen over the root of the nose, with hair coming out through it. Probe could be passed for 4 mm, straight down from the sinus opening. Anterior rhinoscopy did not reveal any significant findings. A clinical diagnosis of congenital nasal dermoid was made.

X-ray of nasal bones was normal. CT scan of the head was done to exclude intracranial extension. CT sonogram did not reveal an intracranial communication.

The lesion was excised by a lateral rhinotomy approach, with an additional elliptical incision over the root of the nose, to include the sinus opening. Intraoperatively, we found a 2 x 1cm pit in the bony pyramid, accommodated by the splayed nasal bones. The pit was lined by a sac (Fig. 2) filled with loose, fragmented hairs.

![Fig. 2. Specimen of epithelium lined sac (containing hair) dissected from nasal pit.](image)

The sac was excised, and the bony defect augmented with nasal septal cartilage. Post-operatively, patient was put on antibiotics. Suture removal was done on the seventh post-operative day and patient was discharged. Two weeks later, the patient complained of persistent discharge from the wound and extrusion of hair from the tip of the nose. Re-exploration was done, and a subcutaneous tract extending from the pyriform aperture to the tip of the nose was visualized (Fig. 3).

![Fig. 3. Intraoperative view](image)

Splayed nasal bones which accommodated a pit containing a hair filled sac (removed at first operation). A subcutaneous tract extending from the pyriform aperture to the tip of the nose is shown dissected.

Detail: specimen of subcutaneous tract which extended from pyriform aperture to the tip of the nose.
Fragmented hair shafts were encountered in the tract, some as long as 2.5 cm. The lesion was excised and the wound closed in two layers. The wound healed without further problems.

Histopathological examination of both lesions revealed a sinus tract extending into the underlying dermis. The tract was lined by keratinized stratified squamous epithelium and filled with loose, fragmented hair shafts (Fig. 4). No dermal adnexae were seen. The lining of the sinus also comprised of granulation tissue with occasional foreign body giant cells. The lesion was reported as a pilonidal sinus.

**DISCUSSION**

The commonest site of origin of a pilonidal sinus is the post anal region [1]. Less commonly, these lesions have also been reported in sites such as the interdigital clefts of hands and toes [3,4] and the umbilicus [2,5]. The rest of the literature on these lesions is studded with reports of pilonidal sinus from uncommon sites like the axilla, perineum, mid-thigh amputation stump [2], scalp [6] and ear [7]. Two cases of pilonidal sinus of the nasal pyramid [8,9] have been reported so far in world literature.

The ethiological origin of a pilonidal sinus is controversial. In the sacrococcygeal region, early reports favored a congenital origin. All possibilities from a vestigial sex gland (Kallet, 1936), to a congenital imperfect union of two halves of the body (Hodges, 1880) had been put forward [4]. The congenital theories were unequivocally rejected by clinicians in the second half of the twentieth century. The theories put forward by Patey and Scarfe [10] and Roger Brearley [11] gained widespread acceptance. The former two clinicians suggested that hairs are sucked into a sinus, which is primarily infective in origin. Brearley [11] proposed that the sinus is produced by hair puncturing the intact skin (the puncture sinus). The negative pressures thus developed, further suck hair into the sinus, aided by lateral movement of the buttocks (the suction sinus). Experimental evidence supported by manometry was provided to highlight this point.

With regards to the nose, it is obvious that no such negative suction can be developed over the nasal pyramid. Indeed, the authors of the previous two case reports...
have suggested that pilonidal sinus of the nasal dorsum is a congenital lesion. Our patient had a discharging sinus with protruding hairs since birth. In early childhood, excision of the lesion was done by a local general practitioner. It is possible that the lesion was incompletely excised and presented again at a later date; in which case, we have a pilonidal sinus existing from birth. Or, the previous lesion could have been a nasal dermoid, the excision of which led to implantation of epithelium and development of a pilonidal sinus. Pilonidal sinuses developing in such sites, due to implantation of hair in diseased or surgically traumatized skin has been described before [12].

The pilonidal sinus has a male preponderance [4,11]. The lesion is typically seen in hirsute [4,11], white males. Blondes and the Negro population are less prone to develop these lesions [11,13], probably on account of the fine hair in the former and curly hair in the latter. The pilonidal sinus usually appears after puberty [11], because there are no stiff body hairs until then.

The histological picture and the contents of the pilonidal sinus have been described in detail. All authors agree that the presence of loose hairs is essential for the diagnosis of a pilonidal sinus. Fewer consensuses are present as to the lining of the sinus. In the sacrococcygeal region, the sinus is lined predominantly by squamous epithelium [4], which may become thin and flat [3], due to episodes of infection.

A barber’s interdigital pilonidal sinus, on the other hand, has only islands of epithelium, with the rest of the tract being lined by fibrous tissue and granulations [3]. This is true of pilonidal sinuses in other sites, like the breast [14] and umbilicus [15]. The pilonidal sinus of the nasal dorsum, like the sacrococcygeal area, appears to have a considerable lining of squamous epithelium [8,9].

On the nasal dorsum, a diagnostic dilemma exists between a pilonidal sinus and dermoid cyst. Dermoid sinus cysts appear within eighteen months of birth [16], while pilonidal sinuses are adult onset in origin. Both have hairs protruding from the sinus opening, but extrusion of cheesy material is seen only in the dermoid cyst [16]. The histopathology gives the final diagnosis in this issue. The dermoid is characterized by the presence of adnexal structures like sweat glands, sebaceous glands and hair follicles [17], which may still have hairs attached to them. Whereas the pilonidal sinus is not associated with adnexal elements and has fragmented hair shafts lying loose within its lumen.

In summary, it is to be emphasized that a pilonidal sinus occurring over the nasal dorsum is highly anecdotal, and a hair bearing lesion on the external nasal pyramid should be considered as a nasal dermoid, unless proved otherwise.

CONCLUSION

Pilonidal sinus is most frequently found in the sacrococcygeal region, and is less commonly encountered at other sites. If a hair bearing lesion presents over the nasal dorsum, the first clinical diagnosis should be a nasal dermal sinus cyst. Histopathological examination is confirmatory.

REFERENCES