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Mid-Line Nasal Sinus (Dermoid)

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Hart in 1927, was first in U.S.A. to report a case of dermoid cyst of the nose. A.H.M. Littlewood (1959), has mentioned the name of Curveilhier, who in 1817 described the dermoids of the nose. New and Erich (1937), reported the incidence of nasal dermoids to be 1.1% of all congenital dermoid cysts. Crawford and Webster (1952), mentioned it to be only 0.79% of all body dermoids. Nydell and Masson (1959), reported 39 cases of dermoids of nose in a period extending from 1915 to 1956 from Mayo Clinic. Littlewood (1961), was able to find only 7 cases in a period of 10 years involving some 30,000 surgical admissions. Wolf and Broadbent (1963), reported only 10 cases in 4 years. Bruce W. Taylor and Erich (1967), reported only 14 patients with dermoid cysts of the nose in a period of 25 years ranging from 1936 to 1960. This represented 7.6% of the dermoids found in head and neck and 3% of the whole body.

It is thus apparant that dermoid cysts and sinuses of the nose are not of frequent occurrence. As the clinical manifestations are likely to be variable, these are often improperly diagnosed and managed. The embryological aspects of this clinical entity make it all the more interesting. It was thus thought proper to report this case.

Case Report : Patient was a male, 20 years age. He complained of a very small pit

opening at the tip of the nose. It was present since birth. Thick, inspissated material used to come out from it almost daily. The thick pultacious stuff could also be squeezed out on pressing the nasal tip. There was history of the nasal tip having become infected on quite a few occasions.

General examination of the patient did not reveal of any other congenital anomaly or as a matter of fact, any other defect.

On local examination, there was a small pin point opening at the tip of the nose, (Fig. 1), from which thick cheesy material could be pressed out. Rest of the examination of the nasal cavities, pharynx, larynx, and ear showed no change from the normal.

Serological tests for syphilis were negative



Fig. 1—Showing pin point opening at the tip of the nose.

Plain skiagram of the para-nasal sinuses (P.A. view) showed widening of the nasal septum with a circular dense opacity in the centre, (Fig 2).



Fig. 2 Contrast radiography by conray 280 showing the track of the sinus.

One c. c. of contrast media (Conray 280), was injected through the opening at the nasal tip and the subsequent skiagram for a lateral view of nose and para nasal sinuses, very clearly delineated the track going into the nasal septum (Fig. 3).

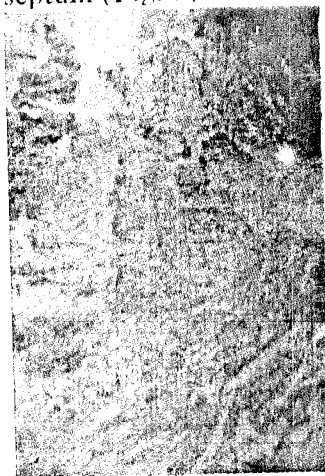


Fig. 3 Microphotograph showing features of dermoid i.e. sebaceous gland, sweat glands fibrous tissue. (X 10)

It was decided to excise the entire sinus track surgically.

The operation was carried out under general anaesthesia with endo-tracheal intubation.

One c.c. of methylene blue was injected into the sinus just prior to the operation. The approach was through a median vestibular incision. The entire sinus tract which extended through the whole length of the septal cartilage, bifurcating it into two halves, with its dilated part at the nasal tip was completely excised. The whole area was then thoroughly curetted out. Recovery was smooth. It is about 8 months since he was operated upon, that he is free from any trouble.

Histopathological examination confirmed the diagnosis of a dermoid sinus (Fig. 4).

Discussion : The embryological aspect of the nasal dermoids have been a controversial subject. Quite a number of theories have been put forward by various authors, but none explained the etio-pathogenesis satisfactorily.

In a recent review by Littlewood (1961) two major theories have been explained for the causation of nasal dermoids and sinuses.

One theory postulates that early in the development of the face, the nasal capsule consists of hyaline cartilage, covered externally by the skin and internally by the mucous membrane. During the 3rd month of development the bony tissues destined to become nasal bones separates the cartilage from the overlying skin. Any cutaneous remnant attached to the cartilage may ultimately develop into a dermoid cyst.

Another theory propounded by him is that the origin of the dermoid cyst is from

the deeper structures that were pinched off at the time of closure of anterior neuropore.

The first theory described by Littlewood was actually suggested by Lunango as far back as 1933. He described these as "Sequestration dermoids." The tri-laminar development of nasal septum and infolding of a dural element between its lateral cartilaginous rod have been suggested as a possible explanation for the septal dermoid.

The nasal dermoids are mostly apparant shortly after birth. In 50% of cases (Bruce Taylor, 1967) it was noted at birth. In one of their cases discovery was made as late as 47 years. In our case it was present since birth although he came for treatment at the age of 90 years.

There is preponderance of this entity in males. The ratio of occurrence between males to females being 2:1 (Mclean et al, 1964; Littlewood, 1961).

The clinical presentation may vary from case to case. It may be a small subcutaneous mass attached to deeper structures. Skin over it may be free or present a small pit, from which hairs may be protruding out. The pit representing the opening of the sinus that may extend deep into the nasal septum as far as the cribriform plate. It may be adherent to the dura. The cyst or sinus opening can be anywhere along the mid dorsal line extending from glabella to the base of the columella. There may be history of attacks of inflammation following trauma or otherwise. The various extensions of the track described are, nasal bridge to nasal or

nasal bridge to cribriform plate, nasal bridge to nasal septum, nasal tip to nasal septum, nasal tip to nasal bones, hour-glass cyst of nasal bridge and septum. The commonest location being upper dorsal. 25 out of 52 cases reported by Crawford and Webster (1952), were of this kind.

The differential diagnosis should be made from :

- (a) Sebaceous cysts — these are adherent to skin and not to underlying tissue. There may be puncta.
- (b) Inclusion cysts are often associated with history of trauma or surgery. Very often there is a scar.
- (c) Furuncle is easy to diagnose because of short history and inflammatory signs being present.
- (d) Lipomas — very rare in nasal region. It is free from skin as well as from deeper tissues.
- (e) Meningocele — transilluminant cystic swelling which enlarges on compression of jugular veins. If open will drain C. S. F.
- (f) Gliomas — feel firm and solid, although not always.

When nasal dermoid is suspected a radio-graphic examinations of skull and facial bones, (Postero-anterior, lateral and Water's view) are essential.

Radiological features of the dermoid of the nose have been classified into two categories by Johnson and Weismane (1964). These have been classified as major and minor radiographic features.

Major radiographic features include, fusiform soft tissue swelling within the septum (as it was in our case), widening or disruption of the nasal vault, bifid septum, glabellar destruction or soft tissue mass, proliferation and pressure erosion, large infra-orbital and inter ethmoidal cystic spaces.

Minor features are also varied but not often of definite diagnostic value.

Sinus track injection would be advisable in the event of no positive soft tissue or bony findings.

The value of this investigation is questionable. Wolf and Broadbent (1963), found that use of radio-opaque dye for visualization of the tract was not helpful. Taylor and Erich (1967) found the injection of the tract very useful in showing the extent and direction of it. It was helpful in our case.

Complete and through excision of the entire tract is the only satisfactory line of treatment. Injection of methylene blue into the cyst or sinus may help to out-line the tract and render excision with fair amount of accuracy (Taylor-Erich, 1967). This is again refuted by Wolf & Broadbent (1963). We found it useful.

Incision commonly used is an elliptical one encircling the cyst or sinus opening. Weisman and Johnson (1964), used lateral osteotomy through a sub-labial or lateral rhinotomy incision.

Kazanzian (1958) used marsupialization of the cystic cavity. Weisman and Johnson (1964), have suggested early operation because of continued expansion and destruction. In such cases one has to weigh

the risk of interfering with development of facial bones.

Recurrances are less likely to occur if the lining is destroyed by electrocoagulation than by sharp excision.

Bone and chondral necrosis with wound infection and delayed wound healing are likely to occur if cautery is used. Deformity may need further plastic operations.

In patients who have only the small "pit-opening", at the tip and those who have a mass along the junction of upper lateral cartilage and the nasal bones, the possibility of using a rhinoplastic procedure is real (Ralph, H. Riggs, 1958).

Inter cartilaginous incisions will provide good exposure upto and including the frontal spine. It is also possible to go down into the nasal septum through the vestibular incisions. We employed median vestibular incision with good result.

It is preferable to operate under general anaesthesia, because there can be pit-falls in determining the correct extent and exact direction of the tract pre-operatively. One may have to undertake very extensive exposure before a complete removal is achieved. No one set procedure can be laid down for a condition, which is so very variable in its manifestations and extent. One has to judge and assess his own choice as to what the best surgical approach would be in the particular case.

Summary

A case of median nasal sinus (dermoid) is described. A brief review of the litera-

ture regarding its embryology, clinical and radiological features has been given. Differen-

tial diagnosis and different surgical procedures have been described.

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