# NASO-ALVEOLAR CYSTS

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THE naso-alveolar cyst produces such a constant and typical facial asymmetry that it readily lends itself to a spot diagnosis. In Jamaica this cyst is not uncommon; in England however, it must be rare, and case reports in the journals are few.

## Clinical Features

The characteristic site on the face at which naso-alveolar cysts present is shown diagrammatically in Fig. 1. The most conspicuous deformity is the flaring of the ala nasi on the side of the cyst; a fullness of the upper lip below the nasal vestibule, and a loss of the naso-facial groove are also obvious (Fig. 2).

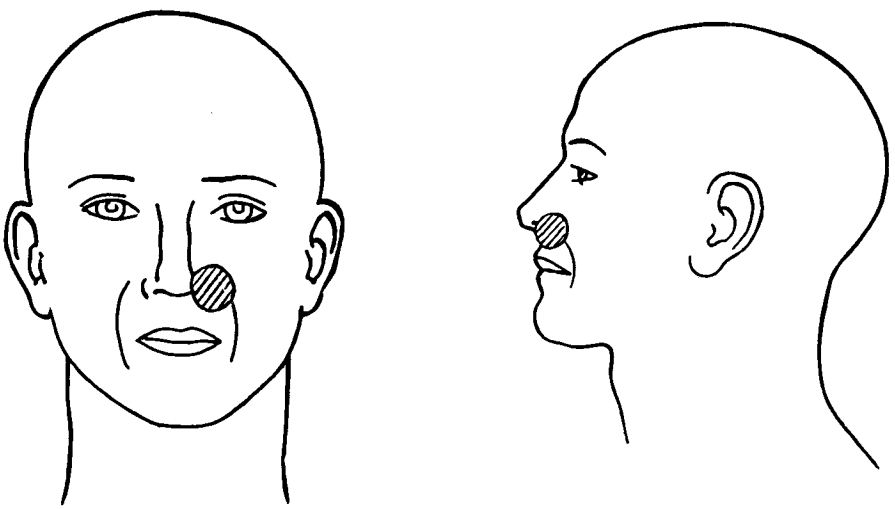


FIG. 1.

Examination with the nasal speculum shows the floor of the vestibule to be raised lifting the anterior end of the inferior turbinate (Fig. 3). Oral examination shows a swelling filling the gingivo-labial sulcus to one side of the frenulum. Palpation with one finger in the sublabial region and one



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in the floor of the nose reveals a cystic non-tender swelling lying upon the bone of the maxilla and encroaching on the pyriform aperture.

The differential diagnosis is from a cyst of dental origin. The X-ray in the case of a naso-alveolar cyst shows no bony or dental disease.

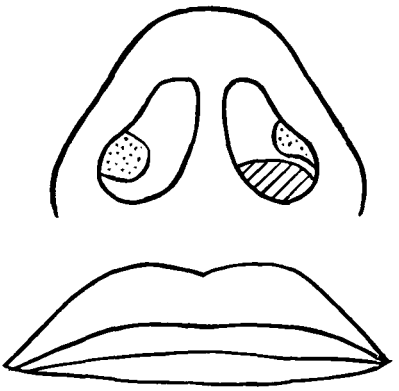


FIG. 2.

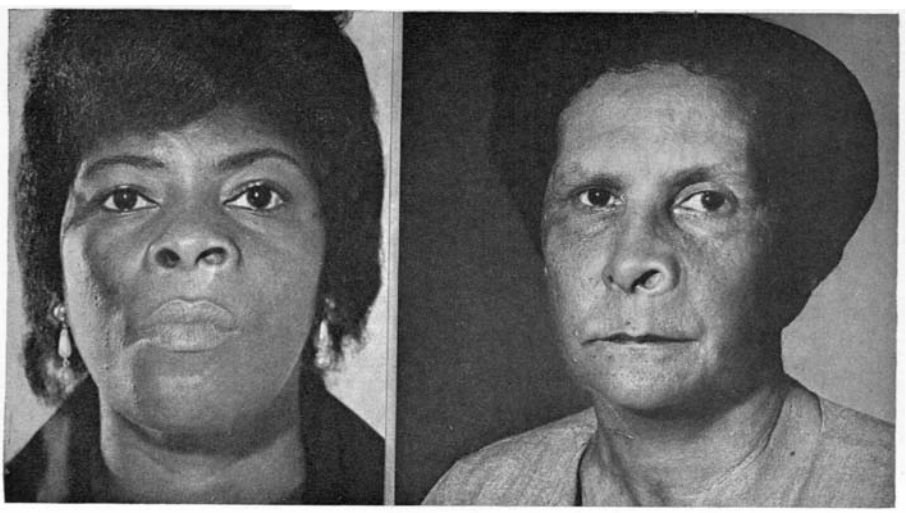


FIG. 3.

**Treatment**

The naso-alveolar cyst is excised through a sublabial incision (an anteriorly placed Caldwell-Luc type of incision). The incision through the mucous membrane exposes the thin muscular layer of the incisivus labii superioris. Incision of this layer exposes the capsule of the cyst which commonly has a slate grey appearance. The capsule is dissected up to the



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inferior and lateral margins of the pyriform aperture of the nose, and from the anterior nasal spine. The capsule is very closely adherent to the mucous membrane of the floor of the nose and a tear of this is almost inevitable at this stage of the dissection, and requires a catgut suture. Rupture of the cyst is also difficult to avoid. The fluid within the cyst varies from being thin and straw-coloured, to being thick and mucoid. After removal a superficial bony depression may be found underlying the cyst on the maxilla.

Aspiration or incision of the cyst is unsatisfactory treatment, and is followed by recurrence and occasionally by secondary infection.

## Description of Cases

Since 1952 twenty-four patients with naso-alveolar cysts have been seen in the Ear, Nose and Throat Out-patients of Kingston Public Hospital, and the University College Hospital, Jamaica. All the patients were coloured, there were twenty-one women and three men. The average age was forty-two, the oldest being sixty-four and the youngest aged twelve.

The duration of the cyst when first seen varied greatly, from 10 years to 10 days. All patients presented complaining of the unsightly facial swelling, which was very disfiguring in the larger cysts. Intermittent pain occurred in eight patients, and nasal obstruction in four. In five the cyst was noted to vary in size, and spontaneous rupture with discharge of fluid into the nose was noticed by one patient.

One man of twenty-seven presented with bilateral symmetrical naso-alveolar cysts, about the size of walnuts (Fig. 4).

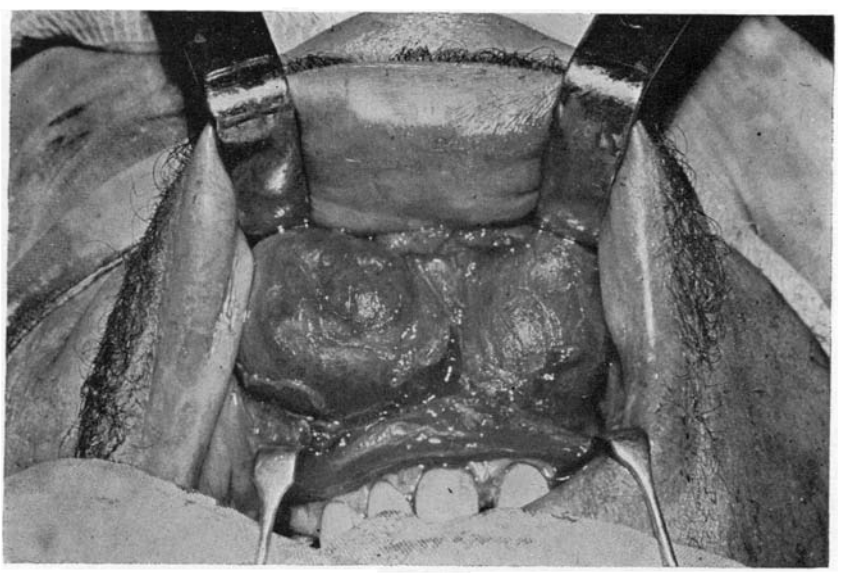


FIG. 4.
Bilateral naso-alveolar cysts exposed through a sublabial incision.



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Following excision, none of the cysts recurred. Bleeding post-operatively appeared to be a problem, and a post-operative haematoma occurred on five occasions. One patient, whose cyst had been treated elsewhere with repeated aspiration, presented with recurrence. Another cyst treated by incision developed secondary infection, and presented with a cellulitis of the upper lip. Three patients gave a history of dental extractions of the upper lateral incisor illustrating the misdiagnosis of the cyst for a swelling of dental origin.

## Pathology

Material was available for histology in twelve of the cases. Ten of the cysts were lined by epithelium of respiratory type, varying from a single layer of columnar or cuboidal cells to pseudostratified or transitional epithelium (Fig. 5). Large numbers of goblet cells were often present and

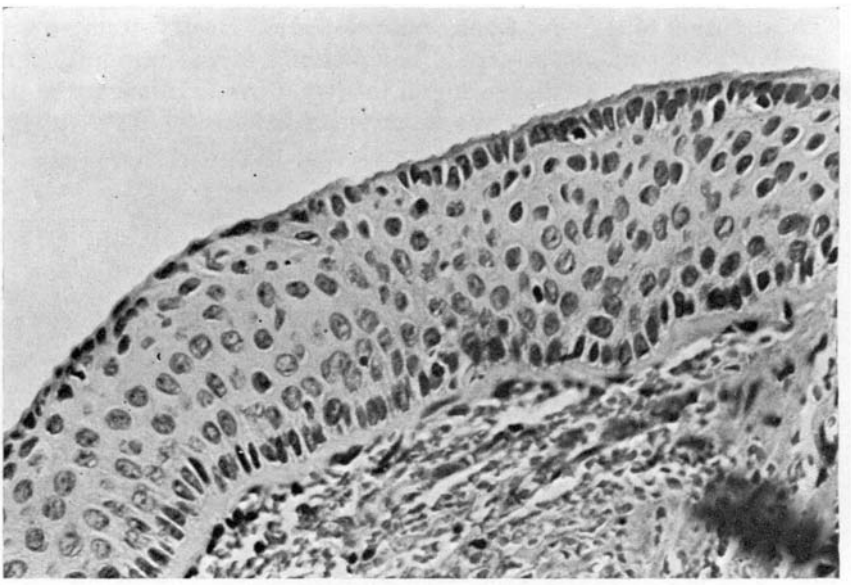


FIG. 5*a*.
Cyst lined with transitional epithelium.

cilia could be frequently demonstrated. Two of the cysts were lined by flattened epithelium, one of these having been previously reported as lymphangioma. These may have originally been lined with respiratory epithelium with flattening due to pressure within the cyst.

The walls of the cysts consisted of voluntary muscle, fibrous or connective tissue in varying proportions and in several of them an infiltrate



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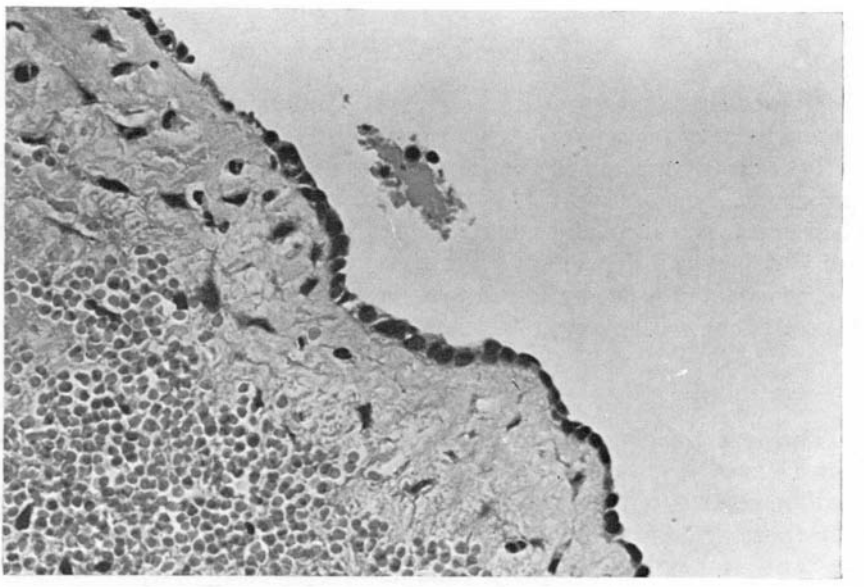


FIG. 5*b*.
Cyst lined with cuboidal cells.

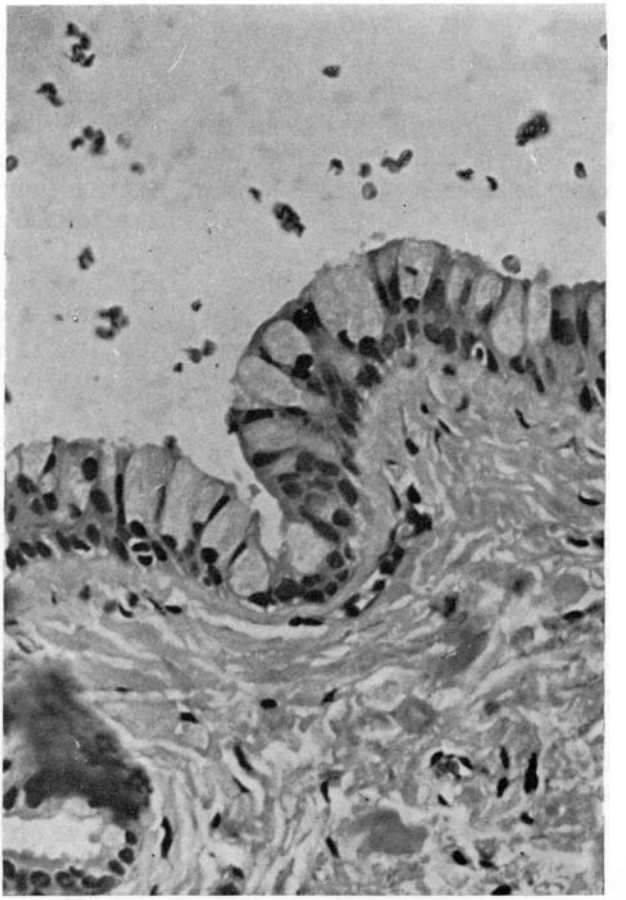


FIG. 5*c*.
Cyst lined with pseudostratified columnar epithelium with goblet cells.

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of chronic inflammatory cells was present. In none of the cysts was there any evidence of malignant change.

The cysts appear to be formed from inclusions of respiratory epithelium. The appearance of the respiratory epithelium is variable; whether it is transitional, pseudostratified, columnar, cuboidal or flattened probably is partly dependent on pressure within the cyst.

The cysts have been referred to as lateral nasal dermoids, but none of this series showed any clear features.

## Development

The naso-alveolar cyst is probably a developmental anomaly, arising from rests of respiratory epithelium. These rests lie between the lateral nasal, maxillary and globular facial processes of the embryo. It is unlikely that there are simply retention cysts as the anatomical position is so constant. It has been suggested that they may represent an abnormal development of the part of the nasolacrymal duct. This duct, however, develops posterior to the site of the naso-alveolar cyst, and also does not, during development extend to the floor of the nose (Sooy, 1944).

## History

Zuckerkandl in 1882 first described the naso-alveolar cyst, and in 1892 the first case was reported in the English literature (Chatellier). By 1925 fifty cases were recorded; it was noted that all but one had occurred in women (Huizinga). At this time it was commented that "Up to now no difference in the development and anatomy of the facial region had been found in the two sexes, which could make this phenomenon at all comprehensible"; this would appear to remain applicable 40 years later.

Cases of bilateral naso-alveolar cysts have been reported (Kofler, 1919; Thorpe, 1950; Burtschi and Stout, 1963) and one cyst which underwent malignant change (Arnoldi, 1929).

Reports of cases from Egypt and Israel appeared in the *Journal of Laryngology* in 1945 and 1946 (Bernfield; Handousa). Miller and Moore in 1949 traced eighty-two recorded cases. In 1950 three cases were reported from the Royal National Throat, Nose and Ear Hospital (Thorpe).

In Thoma's *Oral Surgery* (1963), naso-alveolar cysts are described, and the fact that they are not dental in origin is emphasized.

Few reports have appeared in the Dental journals; Atterbury (1961) found that only four cases had been reported in the previous 20 years. The cysts have been X-rayed following injection of radio opaque material to assist in the diagnosis (Rosen, 1961; Burtschi and Stout, 1963); secondary infection following this procedure has been described.

From the cases seen in Jamaica, and from the more recent case reports (listed below) in the American literature, it is apparent that the



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naso-alveolar cyst is more frequent in women, and possibly commoner in negroes:

CASES REPORTED

| | Year | No. cases reported | No. women | Coloured |
|---|---|---|---|---|
| Laszlo .. .. .. | 1935 | 3 | 2 | 1 |
| Sooey .. .. .. | 1944 | 5 | 5 | 4 |
| Rosenberger .. .. | 1944 | 1 | 1 | 1 |
| Miller and Moore .. .. | 1949 | 3 | 3 | 1 |
| Montreuil .. .. .. | 1949 | 3 | 2 | 3 |
| Thoma .. .. .. | 1963 | 2 | 1 | 2 |
| Total.. .. .. .. | | 17 | 14 | 12 |


## Summary

The naso-alveolar cyst occupies a constant position on the face, producing a very typical facial assymetry. It may cause nasal obstruction and intermittent pain. The treatment is excision through a sublabial incision. The cysts are probably developmental anomalies arising from rests of respiratory epithelium: they are not dental in origin.

Twenty-four cases are reported from Jamaica. Twenty-one were in women. One was bilateral.

The histology showed the cyst lining to be of respiratory type epithelium.


## Conclusions

Attention is drawn to the naso-alveolar cyst, and the characteristic facial deformity that it produces. It is commoner in women, and is probably more frequent in the coloured races.

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