

Ethmoidal scleroma: endoscopic diagnosis and treatment

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Abstract

Twenty patients with medically treated rhinoscleroma and residual ethmoidal manifestations were examined using CT scanning. Cases with positive radiological data of the ethmoids underwent diagnostic and therapeutic nasal endoscopy.

It has been found that ethmoidal scleroma is not as rare a condition as was previously thought. The diagnostic and therapeutic value of nasal endoscopy in ethmoidal scleroma is discussed.

Introduction

Hoover and King (1953) stated that scleroma can affect any portion of the respiratory tract but usually begins in the nose and paranasal sinuses.

Shum (1982) had the impression that scleromal involvement of the maxillary sinus is the most common among the paranasal sinuses and a few cases have been recorded where scleroma had invaded the maxillary antrum (Mossallam and Attia, 1956; Yassin and Safwat, 1966; Saad, 1988). On the other hand, reports about scleroma of the ethmoid air cells are extremely rare. Hsiang (1958) described a case of scleroma producing exophthalmos which involved the ethmoid cells and maxillary antrum. Chatterji *et al.* (1969) reported a rare case in which there was extensive scleroma of the antrum and ethmoid cells with an antrogingivo-labial fistula. Nayar *et al.* (1985) presented a case of scleroma of the maxilla and ethmoid in a diabetic who presented with an orbital apex syndrome.

The use of nasal endoscopy in different pathological conditions of the nose and sinuses increases diagnostic possibilities and allows more precise detection of diseases which arise in these areas. With endoscopic endonasal surgery, pathological conditions can be treated safely and precisely, usually avoiding extensive surgery (Messerklinger, 1978).

It has been noticed that some medically treated cases of rhinoscleroma in spite of having apparent cure of the nasal pathology still show residual manifestations related to ethmoid sinus involvement—mainly headache and pus in the middle meatus. The aim of this work was to study endoscopically the ethmoid air cells in these cases of rhinoscleroma, to evaluate the precise occurrence of secondary scleroma in these cells and to assess the value of minor endoscopic surgical procedures in the relief of ethmoidal manifestations of scleroma.

Materials and methods

Twenty patients with medically treated rhinoscleroma

were selected for this study. These patients had been diagnosed previously on clinical, bacteriological and histopathological grounds and had received anti-scleroma medication in the form of an adequate oral systemic course of rifampicin 300 mg twice daily for six weeks. In spite of post-treatment improvement in the nasal lesion, these patients still had ethmoidal manifestations, mainly ethmoidal headache and pus in the middle meatus.

All the 20 cases underwent CT scanning of the paranasal sinuses. Cases with positive radiological findings of ethmoid air cell disease underwent endoscopic endonasal surgery under local and surface anaesthesia using Hopkins/Karl Storz 18 cm long, 4 mm wide endoscopes with deflection angles 0°, 70° and 120° angles.

The operative technique included infundibulotomy, removal of the medial infundibular wall and opening or removal of the ethmoidal bulla. Opening of the posterior ethmoid was not needed in all the cases. The maxillary ostium was extended for examination of the maxillary sinus.

Suspect tissue was removed from the ethmoid cells, processed and stained with haematoxylin and eosin for histopathological study.

During the first few post-operative days the wound cavity was cleaned daily by careful suction and then treated with 2 per cent rifampicin ointment (Gamea, 1988). Systemic oral rifampicin 300 mg twice daily was given to the patients for three weeks. The patients were followed up clinically and endoscopically for six months.

Results

I Endoscopic findings

Opacity of the ethmoid air cells on CT scanning was found in seven cases out of the 20 (Fig. 1). In two cases the ethmoid air cells of both sides were affected. Nasal endoscopy performed for the seven cases revealed one or more of the following pathological changes in the ethmoid air cells:

—Pathological secretions or pus.

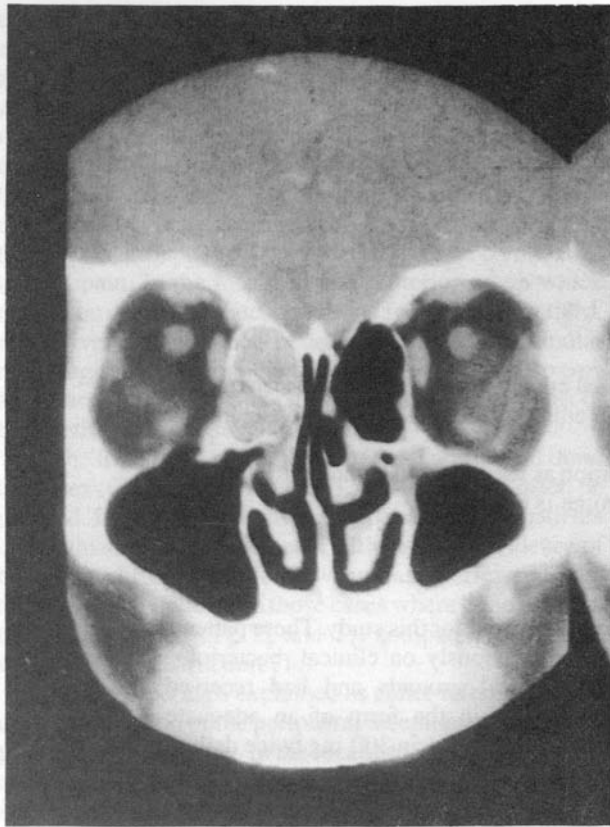


FIG. 1.

CT-scan showing opacity of the ethmoid air cells on the right side.

- Oedematous mucosa with polypoid formation.
- Diffuse thickening with granulomatous formation.

II Histopathological findings

The ethmoidal biopsies showed two types of pathological change:

1. Three cases showed typical histopathology of scleroma with Mikulicz cells, Russell's bodies, plasma cells and lymphocytes (Fig. 2).
2. Four cases showed marked oedema with chronic inflammatory cells mainly plasma cells and lymphocytes.

III Follow-up findings

During the first few post-operative weeks, five cases out of seven showed rapid clinical improvement in the form of disappearance of headache and purulent discharge. One case, although showing stoppage of discharge, still had headache. The seventh case showed no improvement.

Discussion

Secondary antral involvement with scleroma has been reported in the past but published accounts of ethmoidal involvement are very rare. This might be due to the relatively easier methods of investigations of the maxillary sinus in the form of plain X-ray, antroscopy and exploratory antral surgery.

There is evidence to suggest that the actual involvement of ethmoid air cells with scleroma is much more than the rate of reported cases. This evidence includes:

1. Some medically treated rhinoscleroma cases although showing improvement of nasal pathology still had residual ethmoidal manifestations.
2. Some cases of dacryoscleroma (Badrawy, 1962) and orbitoscleroma (Mortada, 1963) were attributed to direct infiltration of the ethmoid air cells with scleroma.
3. The route of infection in secondary antroscleroma was suggested to be through the ethmoids which might be directly infiltrated by the nasal granuloma (Yassin and Safwat, 1966). This means that involvement of ethmoids with scleroma should be at least equal to the incidence of antroscleroma.
4. Many years of endoscopic observation proved that most infections of the paranasal sinuses are rhinogenic. The common focus of infection is the stenotic areas of the anterior ethmoid which is considered as a key location for infection of the maxillary sinus (Stammberger, 1986).
5. Recent endoscopic studies of maxillary sinus in rhinoscleroma showed that secondary antroscleroma is much more commonly encountered than previously thought (Gamea, 1990).

The progress in CT scanning and nasal endoscopy now allows easy and clear investigation of the ethmoid air cells. Nasal endoscopy not only allows direct visual assessment of the pathology in ethmoid air cells, but also permits biopsies to be taken. It helps to examine a higher number of patients and to pick up even earlier changes and localized areas of pathology. Moreover the therapeutic value of nasal endoscopy is unquestionable in removing secretions, crusts, or granulations from these critical ethmoid cells. It also allows an accurate follow up of cases and assessment of the benefits of planned therapy (Gamea, 1990).

Ethmoidoscleroma is a term proposed here to describe involvement of the ethmoid air cells with scleroma. Definite ethmoidal scleroma with a typical histopathological picture was found in three cases whilst the other four cases showed early changes of scleroma or secondary effects induced in the ethmoid air cells by the nearby nasal lesions.

It is clear from the present study that ethmoidal scleroma is not as rare a condition as was previously thought. Being the centre point of the osteomeatal complex, the

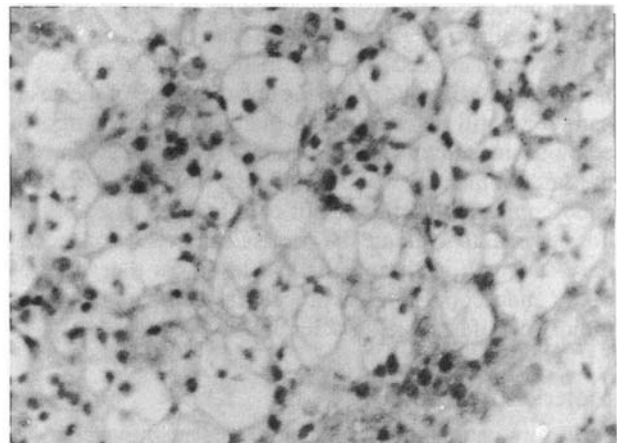


FIG. 2.

Typical scleromatous infiltration with abundant Mikulicz cells, plasma cells and lymphocytes (H & E $\times 400$).

anterior ethmoid plays a crucial role in the pathophysiology of scleroma in the maxillary sinus and it is believed that ethmoidal cells are the route of direct infiltration of the maxillary antrum by the nasal granuloma.

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Key words: Rhinoscleroma; Ethmoid sinus; Endoscopy.