

Antroscopy in rhinoscleroma

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Abstract

Rhinoscleroma is a chronic specific granulomatous inflammatory condition that has an affinity to the mucosa of the upper respiratory tract. Involvement of maxillary antrum is said to be very uncommon. In the present study antroscopy was performed in 20 patients with rhinoscleroma to find out the type, nature and site of the lesion in the maxillary antrum. The maxillary antrum was involved in 60 per cent of cases with rhinoscleroma. The lesions occurred in the form of atrophic changes, granuloma, and the fibrotic thick healed stage. The anterior-inferior part and medial wall of the antrum are found to be more commonly affected. It is suggested that involvement of maxillary antrum in scleroma may act as a reservoir of infection and such patients may therefore take a longer time to respond to antibiotic therapy.

Introduction

Scleroma, or rhinoscleroma, is a progressive granulomatous disease commencing in the nose and eventually extending into the nasopharynx, oropharynx, larynx and sometimes the trachea and bronchi (Friedmann, 1966). Extension of scleroma into the maxillary antrum is said to be rare and scattered cases have been reported in the literature (Yassin and Safwat, 1966; Chatterji *et al.*, 1969), although primary scleroma of the maxillary antrum is rare (Saad, 1988). These cases with maxillary antral lesions were diagnosed only when there were signs or symptoms of antral involvement or by exploration of the maxillary antrum by a Caldwell Luc operation. Because of extensive nasal involvement in the granulomatous stage, there is a possibility of spread of the disease into the maxillary antrum. The investigation of the paranasal sinuses in scleroma is hitherto limited to radiological changes (Shehata *et al.*, 1975). An extensive survey of the literature revealed no study of direct visualization of the maxillary antrum in rhinoscleroma patients. Antroscopy is the only method which can give information regarding the type, nature and site of the lesion.

Material and methods

Twenty confirmed rhinoscleroma patients (untreated) attending for the first time were studied. Twelve patients

were male and eight were female. The majority of the patients were between age of 20–40 years. After a thorough clinical examination, X-rays of the paranasal sinuses were performed. All the patients had a positive sign of maxillary sinus involvement either on one or both sides. All patients showed histological evidence of rhinoscleroma. Antroscopy was performed in each case. Antroscopy was performed using a 4.5 mm trochar and cannula (Storz) and a 4 mm 70° Hopkins solid rod telescope under local anaesthesia (2 per cent xylocaine with adrenaline) through the canine fossa route.

The 70° telescopic view allows the best all round inspection of the antrum (except a small area on the anterior wall and around the site of entry). The type, site and nature of the pathology observed were recorded. A biopsy was taken in four patients.

Results

The biopsies taken from four patients with obvious granulomatous disease were positive in three cases.

Among 20 cases of rhinoscleroma with radiographic evidence of maxillary antrum pathology, 12 had evidence of an antral lesion on antroscopy. Various types of scleroma lesions seen in the antrum are shown in Table I.

The antroscopic findings are found to be related with radiological observations (Table II).

Rhinoscleromatous lesions in the nose have been classified as:

- Stage I Invasive (atrophic).
- Stage II Proliferative (granuloma).
- Stage III Healed fibrotic (stenotic).

It is observed that the maxillary antrum is more commonly affected in Stage II as shown in Table III.

Discussion

Antroscopy is a well recognized technique for accurate

TABLE I

VARIOUS TYPES OF SCLEROMA LESION SEEN DURING ANTROSCOPY

Type of lesion	No. of cases
1. Normal	8
2. Superficial inflammation with or without ulceration	3
3. Atrophic lesion with a thick secretion deposit	2
4. Granulomatous lesion	5
5. Healed scar and thickened area	2
Total	20

TABLE II
RELATION OF ANTROSCOPIC FINDINGS WITH RADIOLOGICAL PICTURE

Radiological observations	No. of patients	Type of antral pathology				
		Normal	Inflammation	Atrophic	Granuloma	Healed scar
Diffuse opacity	9	2	2	2	3	–
Patchy opacity	6	3	1	–	2	–
Thickened mucosa	5	3	–	–	–	2
Total	20	8	3	2	5	2

TABLE III
SHOWING RELATION OF CLINICAL STAGING OF INTRANASAL SCLEROMA AND INVOLVEMENT OF THE MAXILLARY ANTRUM

Stages	No. of patients	Antral pathology				
		Normal	Inflammation	Atrophic	Granuloma	Healed scar
I: Invasive (atrophic)	6	4	1	1	–	–
II: Proliferative (Granuloma)	7	–	2	–	4	1
III: Healed fibrotic (Stenotic)	7	4	–	1	1	1
Total	20	8	3	2	5	2

diagnosis of antral disease. Antroscopy has repeatedly been shown to provide information which is superior to that obtained by other clinical or radiological investigations (Ritler, 1977; Smith and Cable, 1988). The antroscopic examination in the present study of 20 rhinoscleroma patients revealed the presence of a positive antral lesion in 12 cases (60 per cent).

Similar to the intranasal stages, the different types of scleromatous lesion were found in the antrum, beginning with a localized area of inflammation through to atrophic patches and localized granuloma formation depending upon the immunity of the host and the virulence of the organism. Scarring and thickening of mucosa are also seen in places. These different types of lesions have been found to be related to radiological findings.

The site of predilection for the occurrence of scleroma is either the muco-cutaneous junction (e.g. the floor of the nasal vestibule) or where the character of the mucosa changes from one type to another (changes from columnar ciliated epithelium to transitional or squamous epithelium or *vice versa*). In the maxillary antrum, the initial lesion first produces chronic maxillary sinusitis by blocking the natural ostium by atrophic changes, granuloma or fibrosis. Subsequently patchy metaplasia of the antral epithelium occurs which produces a favourable site for invasion of the scleromatous lesion. It has been found that in almost each case the antero-inferior portion and medial wall of the antrum was main site of disease. This may be due to the fact that the antero-inferior portion is the site where the maximum stagnation of secretion remains due to gravity in the standing or sitting position. This can lead to patchy metaplasia of the antral mucosa at this site and produces favourable conditions for the scleroma to flourish. Involvement of the medial wall might be due to direct extension of intranasal lesion through the natural ostium of the maxillary antrum.

The microscopic pathology of the scleromatous lesion in the antrum is similar to other scleromatous lesions. The biopsy was taken only of the granulomatous type of the lesion, which shows the classical picture of rhinoscleroma.

The present study reveals 60 per cent of the patients

have a subclinical involvement of the antral mucosa which may enable the maxillary antrum to act as reservoir of infection as it does in other cases of rhinitis and also is thought in cases of leprosy (Soni, 1988). It is also possible that the involvement of the maxillary antrum by scleroma causes the patient to take longer to respond to antibiotic therapy because of constant re-infection of the nose from the maxillary antrum. Maxillary sinus involvement gives rise to persistent headache in some rhinoscleroma patients. In summary, examination of the maxillary antrum by antroscopy should be performed in all cases of rhinoscleroma.

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