Experience with malignant tumours of the maxillary sinus in the Department of Otolaryngology Universiti Kebangsaan Malaysia, Kuala Lumpur

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Summary

Thirty one cases of malignant tumours of the maxillary sinus presenting to the Department of Otolaryngology, Universiti Kebangsaan Malaysia over a four year period from 1982 to 1986 are reviewed. 18 cases (58.1%) were squamous cell carcinoma while seven cases (22.5%) were Non-Hodgkin's lymphoma. There were four cases (12.0%) of adenoid cystic carcinoma while in two cases (6.5%) the tumours were undifferentiated. Presentation was generally late. Nasal obstruction, facial swelling and epistaxis were the main presenting symptoms. Nasal involvement was found in 61.3% of cases, while 51.6% had involvement of the palate as well. Metastasis to the cervical lymph node were uncommon (6.5%). Surgery and radiotherapy with or without chemotherapy were the main modes of treatment in the management of malignant tumours of the maxillary sinus.

Key words: Malignant tumour, maxillary sinus.

Introduction

Data on malignant tumours of the maxillary sinus in Malaysia are scarce and reports have been few. Treatment has been generally unsatisfactory not only in Malaysia but throughout the world.[1,2] This poor result is attributed to the disease being invariably advanced on presentation and delay in seeking treatment on the part of the patients. However, early signs and symptoms may be overlooked due to lack of awareness about the disease on the part of the general medical practitioners as they are often indistinguishable from that of chronic upper respiratory tract infection.

Material and methods

Thirty one cases of malignant tumours of the maxillary sinus presenting to the Department of

Otolaryngology, Universiti Kebangsaan Malaysia between 1982 to 1986 were reviewed. Patient's clinical records were retrieved from the Medical Record Office. Clinical data including age, sex, symptomatology, physical signs, histology and treatment modalities were analysed.

Results

Clinical findings: There were 18 males and 13 females and their ages ranged from 16 to 18 years. The average age was 55.7 years. Patients with Non-Hodgkin's lymphoma were younger with an average age of 38.7 years. There were 15 Malays, 10 Chinese, 5 Indians and one Orang Asli. The racial distribution for each histologic type compared well with the ethnic distribution of Malaysians, except for Non-Hodgkin's lymphoma. In this histological type, except for one Orang Asli, all were Malays accounting for 87.5% of cases (Table I). No known etiological or predisposing factors were recorded in these patients.

Table II lists the symptoms and signs at presentation. In the majority of cases, the duration between the first noticeable symptom and the presentation at our clinic was delayed, with an average of 8.5 months. Nasal obstruction (48.5%) was the main earliest symptom noticed by the patient. Other earliest symptoms were epistaxis (29.0%) and cheek swelling (22.5%).

Invasion of the medial wall of the maxillary sinus with the presence of tumour mass in the nasal cavity was found in 19 (61.3%) patients (Figure 1). Inferior spread to involve the palate and alveolus was also common being present in 16 (51.6%) patients (Figure 2). An equal number of patients has swelling of the cheek. Proptosis was found in five (16.1%) patients and three of them were first seen in the Opthalmology Department. Cervical lymphadenopathy was uncommon being found in only two (6.5%) patients. In one patient with adenoid cystic carcinoma the tumour had spread to the base of skull causing 3rd, 4th, 5th and 6th cranial nerves palsies. This carcinoma is well known for its predeliction for neural spread.

In all of the 31 cases, biopsies were obtained from the nose or palatal growths. We did not have to resort to antroscopy or Caldwell-luc operation for biopsy specimen.

Table I

Racial distribution of the various histological types of malignant tumours of the maxillary sinus

Race	HISTOLOGICAL TYPE			
	Squamous cell carcinoma	Non-Hodgkin's lymphoma	Adenoid cystic carcinoma	Undifferentiated carcinoma
Malay	7	6	1	1
Chinese	6	–	3	1
Indian	5	–	–	–
Orang Asli	–	1	–	–
TOTAL	18	7	4	2

Table II

Clinical features of malignant tumours of the maxillary sinus at presentation

Clinical features	No. of cases	%
Symptoms:		
Nasal obstruction	18	58.1%
Epistaxis	14	45.2%
Facial/cheek swelling	16	51.6%
Diplopia	4	12.9%
Cheek pain	3	9.7%
Epiphora	1	3.2%
Headache	5	16.1%
Signs:		
Mass in nose	19	61.3%
Growth in palate/alveolus	16	51.6%
Facial/cheek swelling	16	51.6%
Proptosis	5	16.1%
Mass in post nasal space	4	12.9%
Cervical nerve palsies	1	3.2%

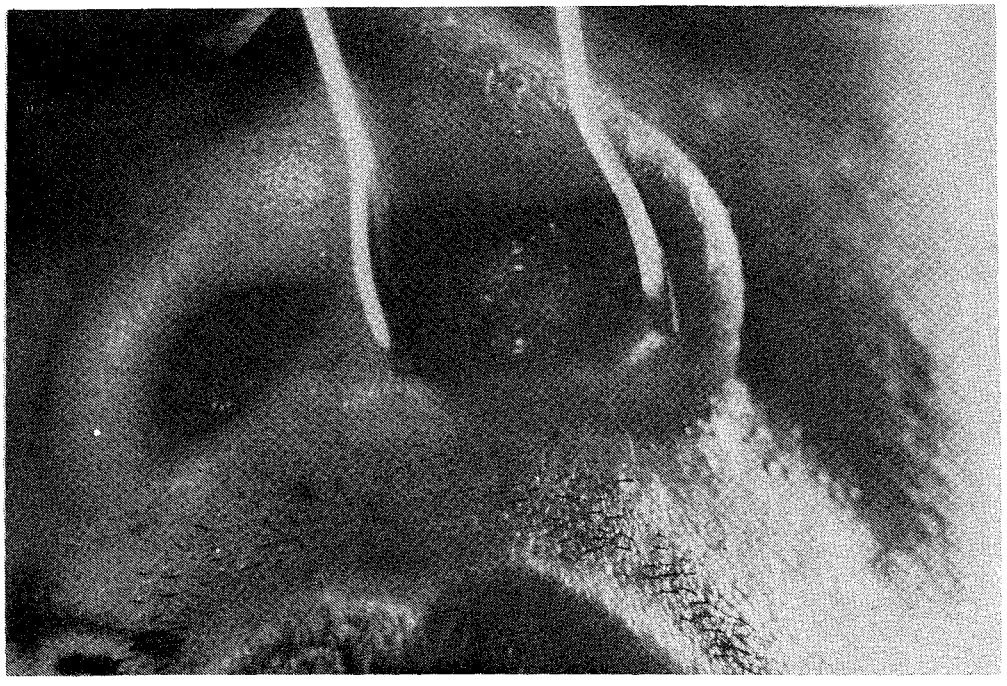

Fig. 1 Tumour mass in the nasal cavity

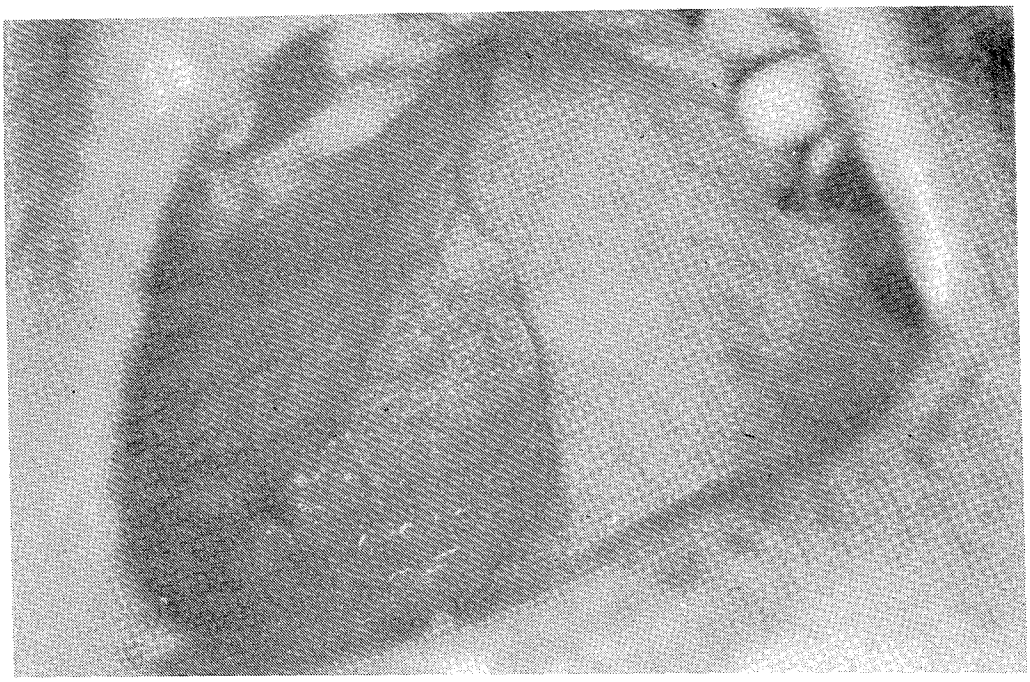

Fig. 2 Involvement of the hard palate by tumour

Histology: The commonest histological type was squamous cell carcinoma which accounted for 18 cases (58.1%). Seven patients (22.5%) had Non-Hodgkin's lymphoma making it the second commonest histological type of malignant tumour of the maxillary sinus in this review. There were four cases (12.9%) of adenoid cystic carcinoma. In two patients (6.5%) the tumours were undifferentiated.

Treatment: The mode of treatment was dependant on the histological type of the tumour. All seven patients with Non-Hodgkin's lymphomas were treated by radiotherapy with chemotherapy. All the 13 operable cases of squamous cell carcinoma and the two cases of undifferentiated carcinoma were treated with a combination of surgery and radiotherapy. Five patients with squamous cell carcinoma were given radiotherapy alone, either because they refused surgery or the tumours were too extensive for surgery. All the four cases of adenoid cystic carcinoma were treated with surgery alone. The form of surgery performed in the operated cases were partial maxillectomy (three cases), total maxillectomy (12 cases) and total maxillectomy with exenteration of the eye (four cases).

Discussion

Malignant tumours of the paranasal sinuses are relatively rare.[1] They constitute only 3% of head and neck tumours.[2] Seventy percent of these tumours occur in the maxillary sinus.[3]

Maxillary sinus tumours are seldom detected early and the presence of advanced tumour at the time of presentation is common not only in our review but also in other series throughout the world.[1,3] As such, treatment results in the past had been unsatisfactory, with a 30% overall five year survival rate.[2] The tumour is growing within a well hidden cavity surrounded by bony walls and therefore gives few or no early signs. Nevertheless, as shown in this review, early symptoms such as nasal obstruction and epistaxis especially when unilateral and occurring in middle age and elderly patient deserves proper investigations so that a relatively early stage of the disease is diagnosed.

Plain x-ray of the maxillary sinus is invaluable in showing soft tissue opacity of the sinus or bony erosion of its wall in suspected cases. The availability of nasoendoscopy and antroscopy

has made possible the examination of sinus mucosa a routine out-patient procedure, so that sinus tumours can be detected much earlier.

The high percentage of squamous cell carcinoma (58.1%) followed by adenoid cystic carcinoma (12.9%) and then undifferentiated carcinoma (6.5%) compared well with other reported series.[1,4] However, the high proportion of Non-Hodgkin's lymphoma (22.5%) in this series is in contrast to most other series. This, plus the apparent racial predisposition for Non-Hodgkin's lymphoma which was also noted by Said,[5] may be significant and warrants further study and confirmation. Because of the high percentage of squamous cell carcinoma, some authors[1] believe that chronic sinusitis which can cause squamous cell metaplasia of the respiratory epithelium is an important etiological factor in maxillary sinus cancer. Barton,[6] in 1977 discussed the role of nickel as a carcinogen in squamous cell carcinoma in nickel workers. Adenocarcinoma of the nose and paranasal sinuses is known to be common among hardwood workers.[7] None of the above factors were present in our cases.

Cervical lymphadenopathy is uncommon. In this study only two patients had palpable cervical lymph nodes. This small figure is because the maxillary sinus does not have any significant lymphatic drainage. Even when present, it drains into the retropharyngeal nodes and thence to the lower deep cervical lymph nodes which are not easily palpable in early cases. The well known poor prognosis for patients with metastasis in the neck nodes has been shown in other series.[4]

The treatment of malignant tumours of the maxillary sinus will depend on the histological type and stage of the disease. Non-Hodgkin's lymphoma of the maxillary sinus is primarily treated with radiotherapy with doses of the least 4000 rads.[7] In advanced cases, it is combined with chemotherapy to control systemic spread. The primary modality of treatment of squamous cell carcinoma and adenocarcinoma is surgery.[1] Nevertheless, early squamous cell carcinoma localised to the mucosa of the sinus can probably be cured by either radiotherapy or surgery alone.[2] But for the vast majority of patients with fairly advanced tumours most authors[1] believe that the best total result will be achieved if surgery is combined with radiotherapy, either pre or post-operatively. This has been the treatment of choice in the Department of Otolaryngology Universiti Kebangsaan Malaysia. We advocate primary surgery for all operable cases followed by post-operative radiotherapy of 5000–6000 rads in four to six weeks. The surgery commonly performed for malignant tumour of the maxillary sinus is total maxillectomy. This is combined with exenteration of the eye if the orbital floor is involved.

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