

PRIMARY TUBERCULOSIS OF THE NASOPHARYNX

By Thomas Sim and B. H. Ong

SYNOPSIS

Seven cases of primary tuberculosis of the nasopharynx are reported as they are very rare as compared with those secondary to pulmonary tuberculosis. A review of the world literature shows that there are very few well-documented cases. These patients with primary nasopharyngeal tuberculosis are often mistaken as cases of nasopharyngeal carcinoma, from which they have to be differentiated by biopsy.

Five out of the seven cases presented with enlarged cervical lymph nodes. Two patients had throat symptoms, one had an ear symptom, while another presented only with headaches. As compared with nasopharyngeal carcinoma none of the patients had any cranial nerve palsies.

INTRODUCTION

Tuberculous infection of the nasopharynx is quite common among patients with pulmonary tuberculosis (Graff, 1936; Hollender, 1946). However primary nasopharyngeal tuberculosis without any pulmonary involvement is indeed very rare. Savic *et al* (1961) in a review of the world literature over a ten year period up to 1960 could find only four cases, while later Martinson (1967) reported another case.

Fifteen cases of nasopharyngeal tuberculosis were seen in the Ear, Nose and Throat Department, Outram Road General Hospital from 1966 to 1971. Six of these cases were found to have pulmonary tuberculosis and two cases subsequently proved to have nasopharyngeal carcinoma as well. These eight cases were therefore excluded from this study. The remaining seven cases of primary tuberculosis of the nasopharynx are hereby described.

CASE REPORTS

Case 1

C.K.S., a male 18 year old Chinese, was referred to the department in December 1966 with a six months' history of swelling on the left side of the neck. He had no symptoms referable to the ears,

nose or throat. Examination of the nasopharynx showed a suspicious bulge on the left roof and there was an enlarged left cervical lymph node. The initial diagnosis was that of nasopharyngeal carcinoma but biopsy of the nasopharynx revealed "granulomatous lesions with histological features typical of tuberculosis" (Fig. 1).

He was referred to Tan Tock Seng Hospital where investigation failed to reveal any evidence of pulmonary tuberculosis. He was given the usual anti-tuberculous therapy from December 1966 to June 1968. On follow-up he was quite well except for mild deafness due to streptomycin ototoxicity. There was no evidence of any recurrence of the tuberculous infection.

Case 2

A.A., a 26 year old male Indian Muslim, was referred to the department complaining of right-sided headaches for three weeks. He had no other symptoms. Examination of the ears, nose or throat did not reveal any abnormality except for a "mass of tissue" on the roof of the nasopharynx. A biopsy taken from this area was reported as tuberculosis. Chest X-ray and X-rays of the paranasal sinuses were normal.

He was referred to Tan Tock Seng Hospital where no pulmonary tuberculosis was found. He was treated with the usual anti-tuberculous drugs. When last seen he was well.

Case 3

K.C., a 59 year old female Chinese, was referred to the department in July 1968 with a four months' history of enlargement of the left side of the neck and increased sputum production. On

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TABLE I
SEVEN CASES OF PRIMARY NASOPHARYNGEAL TUBERCULOSIS—CLINICAL FEATURES

| Case | Sex M/F | Age Years | Race | Occupation | Symptoms | Duration (Months) | Examination | | Chest X-Ray | Biopsy Done | | |
|------------|------------|--------------|------|------------|-----------------------------|----------------------|------------------------------------|----------------|----------------|-------------------|----------|----------|
| | | | | | | | Nasopharynx | Cervical Nodes | | Nasopharynx/Nodes | Not done | |
| 1 (C.K.S.) | M | 18 | Ch. | Apprentice | Neck gland (L) | 6 | Bulge (L) roof | (L) Enlarged | Clear | + | (TB) | Not done |
| 2 (A.A.) | M | 26 | Ind. | Shop asst. | Headaches | 1 | Mass roof | Nil | Clear | + | (TB) | Not done |
| 3 (K.C.) | F | 59 | Ch. | Housewife | Neck gland (L) Phlegm ++ | 4 | Discolouration (L) lateral wall | (L) Enlarged | Clear | + | (TB) | Not done |
| 4 (N.A.M.) | F | 22 | Ch. | Teacher | Neck gland (R) | 6 | Suspicious growth (R) roof | (R) Enlarged | Clear | + | (TB) | + |
| 5 (W.L.S.) | F | 36 | Ch. | Housewife | Neck gland (L) | Few | Bulge (L) lateral wall | (L) Enlarged | Clear | + | (TB) | + |
| 6 (C.H.) | F | 57 | Ch. | Housewife | Neck gland (R) | 3 | Irregularity (R) | (R) Enlarged | Clear | + | (TB) | + |
| 7 (L.K.Y.) | F | 47 | Ch. | Housewife | Throat Tinnitus (R) | 6 | Bulge (R) roof | (R) Enlarged | Clear | + | (TB) | Not done |

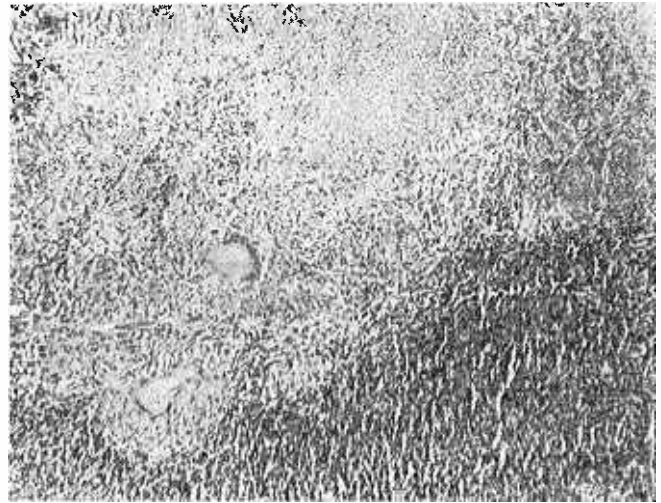


Fig. 1. Case 1: Section shows caseous area on top with surrounding epithelioid cells and one Langhan giant cell. A sprinkling of lymphocytes is seen in the periphery. The darkly stained cells on the lower part are lymphoid tissue in the nasopharynx (H & E \times 75).

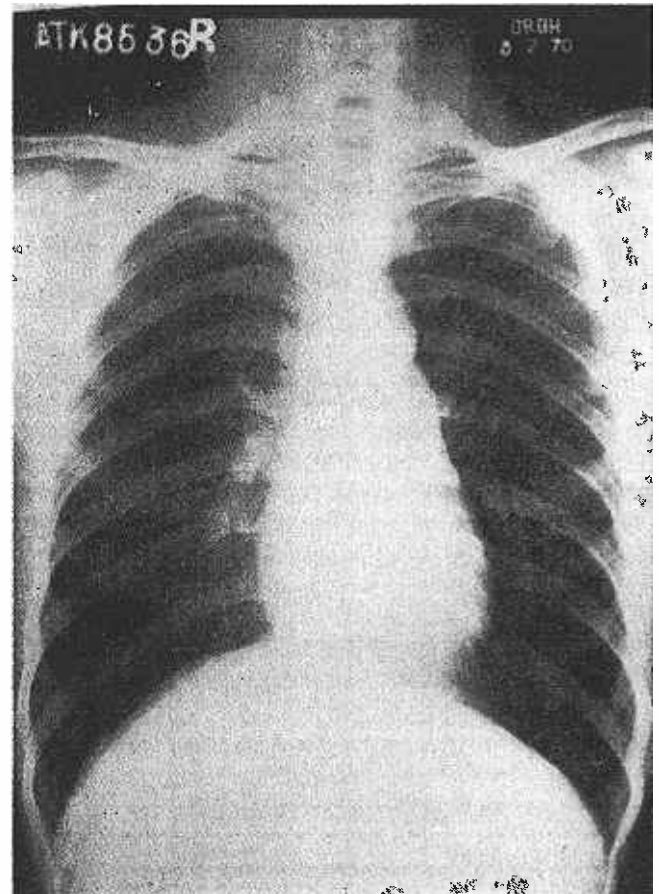


Fig. 2. Case 3: Normal Chest X-ray with no pulmonary involvement.

examination of the nasopharynx, a whitish discoloration was found at the left fossa of Rosenmuller. There was an enlarged, firm but mobile left cervical node.

X-ray of the chest was clear (Fig. 2), while biopsy of the nasopharynx revealed "nasopharyngeal mucosa with a tubercle composed of epithelioid cells and Langhan giant cell" (Fig. 3).

Investigations at Tan Tock Seng Hospital including further X-rays of the chest revealed no pulmonary involvement. Anti-tuberculous therapy was given from July 1968 to July 1970. On subsequent follow-up he was quite well and free from symptoms.

Case 4

N. A. M., a 22 year old female Chinese, was referred to the department in October 1968 with a six months' history of enlargement of the right side of the neck. She had no symptoms referable to the ears, nose or throat. Her father however had died of pulmonary tuberculosis.

Examination of the nasopharynx revealed a suspicious "growth" on the right roof. Biopsy was therefore taken from this area and this revealed "several granulomatous lesions consistent with the appearances of tuberculosis". A biopsy of the right cervical lymph node was also done and confirmed tuberculosis.

She was referred to Tan Tock Seng Hospital where further investigations failed to show any pulmonary tuberculosis. She was placed on anti-tuberculous therapy from October 1968 to November 1970. When last seen, she was quite well.

Case 5

W. L. S., a 36 year old female Chinese, was referred to the department in December 1969 with a complaint of swelling of the left side of the neck for a few months. She had no other symptoms. On examination, the nasopharynx showed a bulge on the left lateral wall and there were two enlarged nodes in the left side of the neck.

Again a provisional diagnosis of carcinoma of the nasopharynx was made and biopsy of the nasopharynx was therefore done. The histology was however reported as nasopharyngeal tuberculosis. A cervical lymph node biopsy also showed tuberculosis.

Chest X-rays showed no evidence of pulmonary involvement and X-rays of the base of the skull showed no evidence of bony erosion. She was referred to the Tan Tock Seng Hospital where anti-tuberculous therapy was started. On follow-up a year later she was symptom-free. The cervical and nasopharyngeal swellings had subsided.

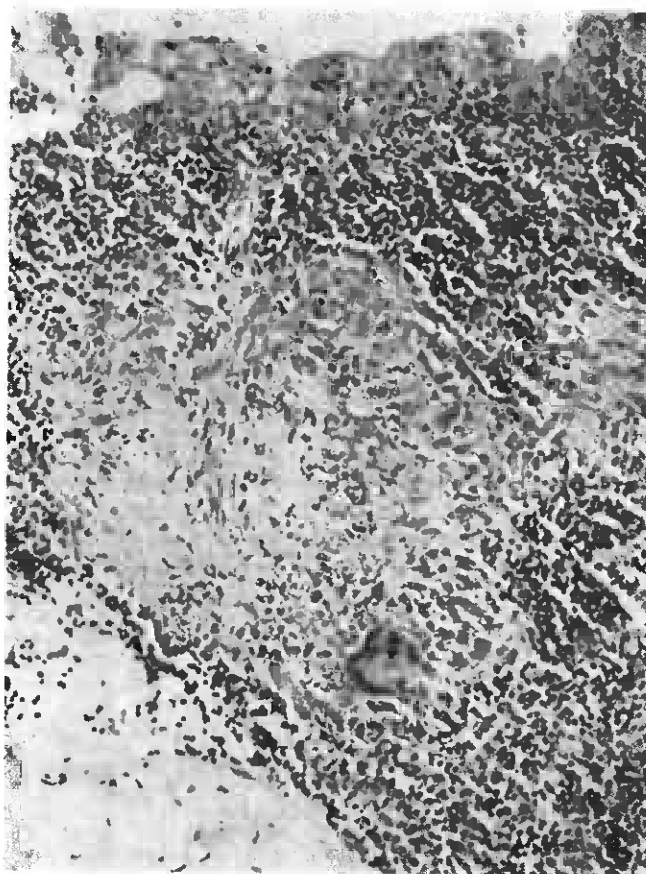


Fig. 3. Case 3: Section shows nasopharyngeal mucosa and a tubercle composed of epithelioid cells and Langhan giant cell (H & E \times 150).

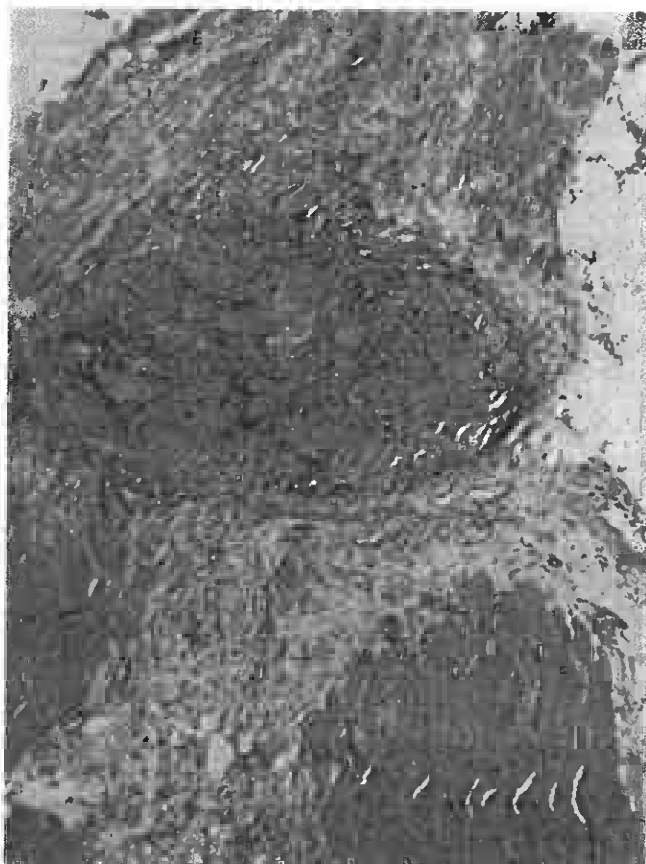


Fig. 4. Case 6: Section shows a tubercle with several Langhan giant cells lying in the muscle of the nasopharyngeal wall (H & E \times 75).

Case 6

C.H., a 57 year old female Chinese, was referred to the department in July 1970 with a three months' history of right-sided swelling of the neck. She had no other symptoms.

Examination of the nasopharynx proved to be very difficult, but there was a suggestion of some irregularity on the right side. Biopsy of the nasopharynx was reported as containing a tubercle with several Langhans giant cells, consistent with tuberculosis (Fig. 4). A cervical lymph node biopsy done later however confirmed the presence of tuberculosis.

Chest X-ray was normal while that of the nasopharynx showed thickening of the posterior wall, but there was no bony erosion (Fig. 5).

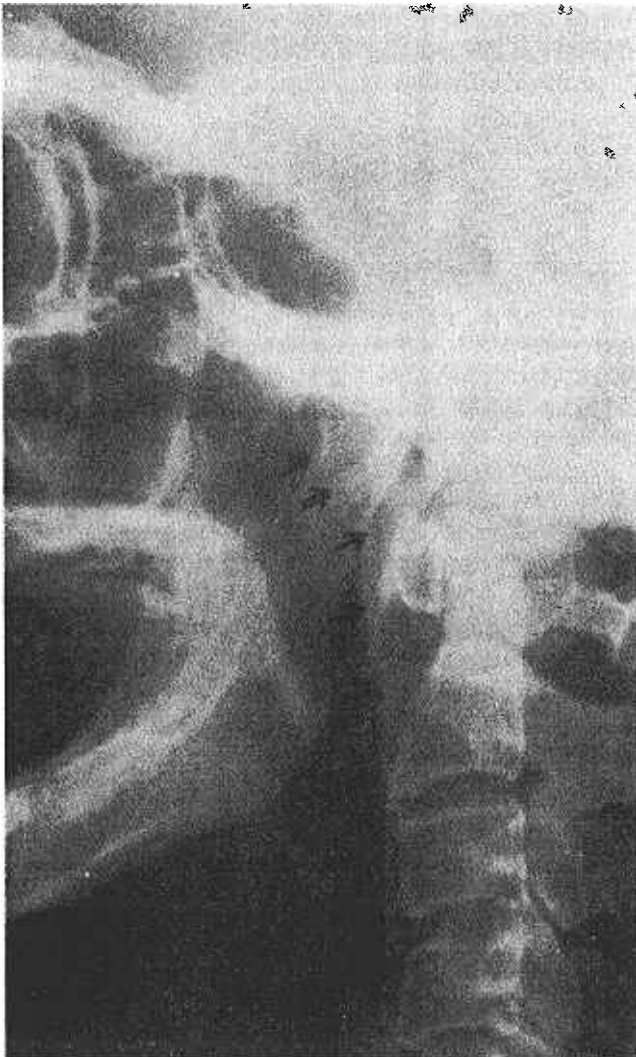


Fig. 5. Case 6: X-ray showing thickening of the posterior wall of the nasopharynx (arrowed).

She was referred to Tan Tock Seng Hospital for anti-tuberculous therapy and on follow-up six months later, was found to be well and was free of symptoms.

Case 7

L.K.Y., a 47 year old female Chinese, was seen in the department complaining of sore throat, cough and right-sided tinnitus for six months. She also had thyrotoxicosis which had been treated.

Examination of the nasopharynx revealed a suspicious bulge on the right roof. She also had palpable right cervical nodes. On the suspicion that she might have nasopharyngeal carcinoma, a nasopharyngeal biopsy was carried out. The histology however was reported as tuberculosis. Chest X-ray showed no active lung lesion. She was then referred to Tan Tock Seng Hospital for treatment.

DISCUSSION

Primary tuberculosis of the nasopharynx is very rare indeed. Even in their survey of the world literature from 1950 to 1960, Savic *et al* could find only 4 well authenticated cases. Later Martinson reported another case. In these cases there were no clinical, radiological or bacteriological evidence of another tuberculous lesion elsewhere nor were there any previous history of pulmonary tuberculosis.

On the other hand, secondary nasopharyngeal tuberculosis, especially that associated with the pulmonary type, is very frequently seen. Graff (1936) in a survey of 118 patients with active pulmonary tuberculosis, found macroscopic lesions in the nasopharynx in 36% of the cases, while microscopic evidence of tuberculous lesions were present in 82%. This was later confirmed by Hollender, who found a 75% incidence of nasopharyngeal tuberculosis in autopsies of 24 patients who died of pulmonary tuberculosis. In fact he reported that nasopharyngeal involvement was even more frequent in these cases than laryngeal tuberculosis.

Isolated (primary) tuberculosis in the upper respiratory tract is very uncommon because of the declining incidence and improved control of the disease. When it does occur, the commonest site of origin is the nasal septum near the mucocutaneous junction. A less common site is the posterior end of the nasal septum, while the least common site is the nasopharynx (Martinson).

Martinson believed that primary nasopharyngeal tuberculosis probably arose from a focus harboured in the adenoids during childhood, which had been dormant until some unknown factor occurred. Another mode of infection could be the inhalation of the organisms into the nasopharynx as suggested by Gibson and Prain (1954). A third possibility is that there might have been an undetected blood-borne focus elsewhere.

In the present series, seven cases of primary nasopharyngeal tuberculosis are described. Eight other cases were excluded due to pulmonary involvement (6 cases) or to concomitant nasopharyngeal carcinoma (2 cases).

There was a female preponderance over the male patients in the ratio 5:2. This is quite surprising as it is not seen in the much more common pulmonary form. In the series, six of the seven patients were Chinese, with a solitary Indian patient, this being in keeping with the population distribution in Singapore. The patients' ages ranged from 18 years to 59 years, with an average age of 38 years (Table I). The commonest mode of presentation of the patients was cervical lymph node enlargement (5 out of the 7 cases), while two of the cases had throat symptoms (cough, sore throat, increased expectoration), one had an ear complaint (tinnitus), and another presented only with headaches. It was surprising that none of the patients had any nasal symptoms. The duration of the symptoms varied from three weeks to six months, with an average of about four months.

It must be stressed that most of the cases were referred to the department because of the suspicion of nasopharyngeal carcinoma. The clinical features and mode of presentation of nasopharyngeal tuberculosis resemble those of carcinoma and it is often only by biopsy that the differentiation can be made. In fact in two cases excluded from the series, the patients had both carcinoma and tuberculosis in the nasopharyngeal biopsies. Cases with cranial nerve palsies or radiological evidence of bony erosion in the base of the skull views point to the diagnosis of carcinoma.

In the cases described, examination of the nasopharynx showed a suspicious irregularity or

a bulge in the roof or lateral walls of the nasopharynx. Cervical lymphadenopathy was present in six out of the seven cases. All the seven cases were diagnosed on nasopharyngeal biopsy, while three cases also had positive cervical lymph node biopsy.

The treatment of nasopharyngeal tuberculosis is along the same lines as the pulmonary type. The usual anti-tuberculous therapy of Streptomycin injections, PAS and INAH tablets were given in all the seven cases, with good results. One patient developed Streptomycin ototoxicity.

ACKNOWLEDGEMENTS

We wish to thank Dr. Andrew Chew, Medical Superintendent, Outram Road General Hospital for his kind permission to publish the cases.

We also wish to thank Dr. Tan Kheng Khoo and Professor K. Shanmugaratnam for their kind permission to publish the histological slides. Finally we also wish to thank Mr. Tan Tee Cheok of the Pathology Department for his help in the preparation of the photographs.

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