Nasopharyngeal Tuberculosis

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Abstract

Nasopharyngeal tuberculosis used to be a common disease in the upper aerodigestive system. Before 1920, 1.4 and 6.5 per cent of all adenoids and tonsils removed from asymptomatic patients were infected by tuberculosis. After the introduction of antituberculous chemotherapy and BCG vaccination, this disease was considered uncommon and sporadic cases were reported in the medical literature. Recently, tuberculosis has begun to increase again due to the high global HIV-infected rate and antituberculous drug resistance among these people. To describe and highlight the clinical features of this condition, fifteen Thai patients (7 males and 8 females) from the Department of Otolaryngology, Siriraj Hospital, Bangkok, Thailand were reviewed. Cervical lymphadenopathy was the most common presenting symptom in our series (93.34%). 11 of them were classified as primary nasopharyngeal tuberculosis and most had abnormal nasopharyngeal findings by mirror examination except 2 cases. Although all had histopathological confirmation of nasopharyngeal tuberculosis, sometimes problems occur in the diagnosis between this disease and nasopharyngeal carcinoma, which are also common among Oriental people in many of their clinical similarities. Therefore routine nasopharyngeal biopsy is considered justified and diagnostic.

Extrapulmonary tuberculosis was considered common in the past and was almost always secondary to pulmonary tuberculosis. In the head and neck region, tuberculosis (TB) was reported to infect the cervical lymph node, larynx, middle ear, nose, pharynx, salivary gland and cervical spine[1-5]. Before introduction of chemotherapy 1.4 per cent of adenoids (Crowe et al 1917) and 6.5 per cent of all tonsils (Thompson 1919) removed from asymptomatic patients were infected with tuberculosis. In 1924, Sir St.Clair Thompson estimated that 25 per cent of tuberculosis patients in

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the United Kingdom had laryngeal involvement[4]. In 1936, Graff indicated the high prevalence (82%) of nasopharyngeal tuberculosis among patients who had active pulmonary tuberculosis[6]. Meanwhile, postmortem studies also showed that 48 per cent of patients who had died from tuberculosis had laryngeal involvement[1,4] and in Hollander's report of 140 autopsy cases in 1946, eighteen cases of nasopharyngeal tuberculosis were found among twenty four cases with pulmonary tuberculosis[7]. It was believed that direct spreading along the airway was the mode of infection in these extrapulmonary sites.

The introduction of antituberculous agents and vaccination, however, resulted in a remarkable reduction of tuberculosis both pulmonary and extrapulmonary. Since then, tuberculosis especially extrapulmonary was classified as a far less common disease while laryngeal and nasopharyngeal tuberculosis were sporadically reported in the world literature[8-15]. Rohwedder reported only one case of nasopharyngeal tuberculosis among his 843 tuberculous patients in 1974[5].

As tuberculosis was left unnoticed for many years, we recently found that the emergence of mycobacterium strains with multiple drug resistance, the wane of immunization and disease control program, the rising population of young adults and HIV epidemic have fueled the rising incidence of tuberculosis again and necessitated WHO to declare tuberculosis as a global emergency in 1993[1].

It was the purpose of this study to review the clinicopathological features of nasopharyngeal tuberculosis and carefully differentiate it from nasopharyngeal carcinoma, which is more common among people in this region.

MATERIAL AND METHOD

Fifteen patients who were diagnosed with nasopharyngeal tuberculosis in the department of Otolaryngology, Siriraj Hospital between January 1987 and December 1992 were reviewed. All clinical findings, chest X-rays and histopathological reports were recorded. All patients who presented with cervical lymphadenopathy and/or abnormal nasopharyngeal appearance, had random transnasal nasopharyngeal biopsy initially performed at the out-patient clinic on a regular basis. Those who had abnormal chest roentgenogram, sputum examination for acid-fast bacilli (AFB) were done later on.

There were two groups of patients included in this study (Table 1). One group had definite diagnosis of tuberculosis by finding of caceous granuloma and/ or AFB on nasopharyngeal biopsy or positive finding of AFB in the sputum examination. The other group had chronic granulomatous inflammation only on the histology. The diagnosis were based on rapid response to antituberculous drugs by disappearance of the lesions or regression of neck nodes. There were 7 males and 8 females enrolled in this study, their ages ranging from 7 to 65 years with the mean age of 31.7 years.

Treatment was considered successful if patients had good resolution in their cervical nodes and the nasopharyngeal abnormalities changed back to normal from indirect nasopharyngeal examination, after a complete course of antituberculous drugs application. The regimen which consisted of 2 months of isoniazid, rifampicin, ethambuthol and pyrazinamide and followed by isoniazid and rifampicin to complete the course of either 6 or 9 months was recommended for extrapulmonary tuberculosis in this study.

RESULTS

The clinical features of the patients are shown in Table 1. Cervical lymphadenopathy was the most common presentation and occurred in 14/15 patients. Among them, 7 patients had cervical lymphadenopathy alone, 6 patients also had constitutional symptoms of malaise, fever and/or weight loss, 3 patients had painful enlarged nodes (cases 1, 13, 14). Otitis media with effusion (OME) were found in 2 patients and was the sole presentation in one patient, the other also had associated symptoms of cervical lymphadenopathy and epistaxis.

For cervical lymphadenopathy, the nodes were solitary in 5 patients (cases 2, 4, 5, 6, 10). Multiple enlarging nodes were found in 9 patients, six of which were bilateral. The largest node encountered was 6 cm in diameter, the rest ranged between 1 to 4 cm. The location of nodes were upper, middle cervical and posterosuperior regions.

By using a mirror or nasopharyngoscope, the nasopharynx was examined and appearance described. Twelve patients had nasopharyngeal abnormalities, either irregularity or ulceration. One of them had a bulging mass from the posterior nasopharyngeal wall. In one patient (a 7-year-old girl) adenoid hypertrophy in conjunction with OME was the only finding. In this particular patient, the initial myringotomy resulted in large perforation of the tympanic membrane and granulation tissue in

Table 1. Case reports.

Patients Age in years /Sex	Clinical features	Duration (weeks)	Nasopharyngeal appearance	Chest X-ray	Nasopharyngeal biopsy
1. 19/M	C. node, neck pain, weight loss	12	irregular mass	inactive tuberculosis sputum AFB-ve	caseous granulomatous
2. 18/F	C. node	2	irregular mass	inactive tuberculosis sputum AFB-ve	caseous granulomatous
3. 23/M	C. node, fever	8	normal	normal	caseous granulomatous
4. 65/M	C. node	12	irregular mass	normal	caseous granulomatous
5. 44/M	C. nodes	8	normal	normal	caseous granulomatous
6. 58/F	C. node, fever sorethroat	12	ulceration	normal	caseous granulomatous AFB +ve
7. 60/F	C. node, epistaxis, OME	20	bulging mass at posterior wall	normal	caseous granulomatous AFB +ve
8. 39/M	C. node	4	mass	normal	caseous granulomatous AFB +ve
9. 24/F	C. node	4	mass, lateral wall	active tuberculosis sputum AFB+ve	chronic granulomatous
10. 18/F	C. node	12	mass, lateral wall	active tuberculosis sputum AFB+ve	chronic granulomatous
11. 7/F	OME	4	adenoid enlargement	normal	chronic granulomatous
12. 25/F	C. nodes	8	irregular mass	normal	chronic granulomatous
13.*21/F	C. node, neck pain	1	irregular mass, mucopus	normal	granulomatous inflammation
14.*24/M	C. node, malaise, neck pain	2	irregular mass with deep ulcer in midline	normal	chronic granulomatous
15* 27/M	C. node, fever	4	irregular mass	normal	chronic granulomatous AFB +ve

C.node = cervical node enlargement
* = had serological test for HIV

the middle ear. Subsequent adenoidectomy showed chronic granulomatous adenoiditis and showed no growth on mycobacterium culture. Although the biopsy of the middle ear granulation was not reported as tuberculous infection, it resolved well soon after treatment with antituberculous drugs and the tympanic membrane was finally closed. In this series, however, there were 2 patients who had normal nasopharynx at the time of examination.

Nasopharyngeal biopsy was performed on all patients. Eight patients had characteristic caseous granulomatous inflammation on their histopathology with positive AFB in three of them. Seven patients (cases 9-15) had only the histopathology of chronic granulomatous inflammation. Two of them (patients 9 and 10) had active pulmonary tuberculosis with positive AFB on sputum examination. One (case 15) had positive AFB in the biopsy specimen. Four of seven patients (cases 11-14) responded very well with antituberculous treatment by disappearance of granulation tissue or nasopharyngeal mass and regression of neck nodes within 2 months of treatment and were included on the basis of therapeutic diagnosis. Tissue culture for mycobacterium which was done in patients 11 and 14 showed no growth.

Chest reontgenography was normal in 11/15 patients, 2 patients had old and inactive tuberculosis and the other 2 patients (cases 9 and 10) had active tuberculous lesions on the chest film since initial examination. Sputum examination was done only in patients with chest abnormalities and AFB was found in those two patients with active pulmonary lesions.

Serological test for HIV was recently requested in this series and the results were positive in two out of three of our patients (patients 14 and 15).

All patients were subjected to a short course regimen of 2 months of isoniazid, rifampicin, ethambuthol and pyrazinamide and then isoniazid and rifampicin were continued to complete the course of at least 6 months. However, 7 patients (46.67%) did not complete the course of treatment and were lost to follow-up, although all of them were treated for at least 4 months and showed good response in size-reduction of cervical nodes and disapearance of nasopharyngeal mass or ulcer from the initial two months of treatment. Those who received the full course of chemotherapy showed complete resolution of cervical lymphadenopathy and nasopharyngeal lesions at the end, including disappearance of middle ear granulation and closure of tympanic membrane perforation since the fourth week of treatment in patient 11.

DISCUSSION

Nasopharyngeal tuberculosis is usually asymptomatic and sporadically reported in the literature[6-13]. It may mimic nasophryngeal carcinoma in many aspects and should be the first differential diagnosis from carcinoma among Orientals in this part of the world. The most common presenting symptom of this disease is cervical lymphadenopathy which was found in fourteen out of fifteen patients in this study. Lymphadenopathy may be present alone or in conjunction with other symptoms such as weight loss, fever and malaise. Other symptoms, which were also confirmed by other studies[14], may also be present in this disease such as OME, sorethroat, epistaxis and neck pain.

The nasopharyngeal appearance could be classified either as a mass lesion or ulceration[14,15]. For mass lesions, confusion with adenoid hypertrophy may occur in children and carcinoma among adults[14,15]. Most patients in our series (thirteen out of fifteen) showed abnormalities in their nasopharynx as seen from mirror examination. Two patients had normal nasopharynx. The duration of symptoms in this disease was shorter than carcinoma (73% were between 1-3 months). The findings in this study prompted us to perform biopsy on every patient who had abnormal findings in the nasopharyngeal area.

Nasopharyngeal tuberculosis has been related to pulmonary tuberculosis for many decades. However, it may arise as a primary infection in adults without any lung disease[9,10,12,14]. Many cases presented in this study were classified as primary nasopharyngeal tuberculosis (11 of 15 patients), whereas, 4 patients were classified as secondary tuberculosis which was related to pulmonary tuberculosis either active or inactive lesions in the lungs.

For young patients who present with cervical lymphadenopathy for a short duration, although the chest X-ray appeared normal, their nasopharynx should also be examined. It is also believed that the route of infection spreading to tuberculous cervical lymphadenitis may be either blood-borne from the chest or through lymphatic vessels from some primary foci in the upper respiratory tract mucosa such as tonsils and nasopharynx[14,17]. Routine nasopharyngeal examination and biopsy in this circumstance will detect infected patients who had otherwise gone unnoticed for tuberculosis and avoid violating the cervical lymph node architecture at the early stage of management.

The diagnosis of nasopharyngeal tuberculosis is based on the histophathological characteristic of caseous granuloma. Positive findings of AFB from tissue or sputum will strongly confirm the diagnosis. Granulomatous inflammation can be found in fungal infection, syphylis, Wegener's granulomatosis and others, although they are less common than tuberculosis. In this study, three out of seven patients with granulomatous inflammation had other evidence of tuberculosis (cases 9, 10, 15) while four of them were diagnosed with tuberculosis on the basis of therapeutic response. Sputum examination and sputum or tissue culture can confirm the diagnosis and reveal other types of mycobacterium. These investigations should also be performed in all suspected cases of nasopharyngeal tuberculosis.

Tuberculosis can be an opportunistic infection among AIDS patients[1]. The rising incidence of HIV- infected patients has increased the number of tuberculous cases among them especially extrapulmonary tuberculosis. The results of treatment is considered poor among these HIV-infected patients due to multiple drugs resistance and immune impairment. Therefore, tuberculosis could become a global emergency again.

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การติดเชื้อวัณโรคบริเวณหลังโพรงจมูก

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ในอดีตการติดเชื้อวัณโรคที่บริเวณหลังโพรงจมูกเป็นสิ่งที่พบได้บ่อย เคยพบว่ามีการติดเชื้อวัณโรคจากต่อมอะดีนอยด์ และต่อมทอนซิลที่ตัดออกจากผู้ป่วยวัณโรคในอัตรา 1.4 และ 6.5% ตามลำดับ ต่อมาอัตราการติดเชื้อวัณโรคที่บริเวณหลังโพรงจมูกมีน้อยลงไปมากหลังจากมีการฉีดวัคซีนบี.ซี.จี และมีการพัฒนายารักษาวัณโรค ในปัจจุบันเชื่อว่ามีอัตราการติดเชื้อวัณโรคเพิ่มขึ้นทั้งนี้เนื่องมาจากมีผู้ป่วยภาวะภูมิคุ้มกันเสื่อมจากการติดเชื้อเอ็ชไอวี ระบาดทั่วโลก และในผู้ป่วยกลุ่มนี้จะมีอัตราการป่วยเป็นวัณโรคได้สูงและพบเชื้อดื้อยาได้บ่อยด้วย การศึกษาครั้งนี้ได้รายงานผู้ป่วยวัณโรคที่บริเวณหลังโพรงจมูก ที่พบในโรงพยาบาลศิริราช จำนวน 15 ราย โดยจัดเป็นวัณโรคบริเวณหลังโพรงจมูกแบบปฐมภูมิ 11 ราย ผู้ป่วยส่วนใหญ่ (93.34%) มาพบแพทย์ด้วยเรื่องก้อนที่คอ และส่วนใหญ่มีความผิดปกติที่บริเวณหลังโพรงจมูก เห็นได้จากการตรวจด้วยกระจกส่องหลังโพรงจมูก ซึ่งลักษณะที่ผิดปกตินี้จะดูคล้ายกับโรคมะเร็งหลังโพรงจมูกซึ่งพบได้บ่อยในคนเอเชีย จึงจำเป็นต้องตัดชิ้นเนื้อตรวจทางพยาธิวิทยาเพื่อการวินิจฉัยที่ถูกต้อง

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