

# Nasal or Nasopharyngeal Tuberculosis Should be Considered in the Initial Diagnosis of Sino-Nasal Inflammatory Diseases

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Nasal or nasopharyngeal tuberculosis (TB) is rare, and the literature is limited to isolated case reports. The anatomic location is a major field of ear, nose, and throat (ENT) specialists, especially rhinologists. Initial symptoms of nasal and nasopharyngeal TB are nonspecific, and it is, therefore, a challenge for rhinology specialists to diagnose rhinologic TB earlier. We reviewed medical records, images, and histological results between 1998 and 2014 and have found that 4 nasal TB and 8 nasopharyngeal TB patients were diagnosed and managed in Severance Hospital (Table 1).

The mean age of the patients with nasal TB was 52.5 years. Most of the patients with nasal TB were middle-aged and female, similar to those in a previous report.<sup>1</sup> Bilateral involvement or the spread of TB into adjacent structures can occur in nasal TB because of the anatomic structure of the nasal cavity.<sup>2</sup> In our cases, however, only 1 TB that originated in the septum spread bilaterally in the nasal cavity, making septal perforation; the other infections were localized to the primary infection site. It has been reported that the recurrence rate of nasal TB after surgical excision is greater than 50%,<sup>3</sup> and the recommended medical treatment for nasal TB is the same as that for other category III TB lesions.<sup>2</sup> All of our patients with nasal TB received medical treatment for 6 to 12 months, and

there was no recurrence or regrowth during the average 7 year follow up.

Based on previous reports, nasopharyngeal TB is slightly more common among females,<sup>4</sup> and 7 out of the 8 patients with nasopharyngeal TB in our review were female. The mean age of the patients with nasopharyngeal TB was 34 years, and half of all the patients were in their twenties, making our patients younger overall compared with those in previous case reports.<sup>5</sup> The most common symptom of nasopharyngeal TB in our study was otologic discomforts such as ear fullness or hearing impairment, although upper cervical lymphadenopathy was the most common clinical presentation of nasopharyngeal TB in a previous study.<sup>5</sup> Three patients in our study received treatment for ear symptoms such as myringotomy before being diagnosed with TB, which delayed the early diagnosis. Therefore, our results show that consideration of the possibility of nasopharyngeal TB in patients with otologic manifestations who were not responsive to conventional management is really important.

Nasal or nasopharyngeal TB can infect patients by two routes. In primary nasal or nasopharyngeal TB, the infection occurs directly via nasal ventilation. As a secondary route, the infection is transferred from another primary site through the airways or blood vessels.<sup>6</sup> Four of the total 12 patients in our study were diagnosed also with pulmonary TB, suggesting that secondary nasal or nasopharyngeal TB infections were disseminated from pulmonary TB infections.

Based on our patients, imaging study such as computed tomography scans were not enough for the diagnosis of nasal or nasopharyngeal TB. Subjective symptoms such as nasal discharge, obstruction, ear fullness were not helpful. We have found that there was no specific examination or diagnostic clue for nasal and nasopharyngeal TB except histologic findings. Biopsy was the only confirmative tool, and tissue-based

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**Table 1.** Summary of the Four Patients with Nasal TB and Eight Patients with Nasopharyngeal TB

Nasal TB									
Case	Age/sex	Chief complaint	Biopsy site	Pulmonary TB	Other EPTB	Sinus involvement	Septal perforation	Treatment duration	Medication
1	68/M	Nasal discharge	Ethmoid sinus	-	TB arthritis	+	-	6 mo	2HERZ/4HER
2	57/F	Nasal mass	Nasal septum	-	-	-	+	6 mo	2HERZ/4HER
3	56/F	Nasal obstruction	Inferior turbinate	-	-	-	-	6 mo	2HERZ/4HER
4	29/F	Nasal obstruction	Nasal septum	+	-	-	-	12 mo	9HERZ/3HER
Nasopharyngeal TB									
Case	Age/sex	Chief complaint	Biopsy site	Pulmonary TB	Other EPTB	Oronasal symptom	Otologic intervention	Treatment duration	Medication
1	37/F	Ear fullness	Rosenmuller fossa	+	-	-	-	6 mo	2HERZ/4HER
2	26/F	Ear fullness	Lateral pharyngeal wall	-	-	-	+	6 mo	2HERZ/4HER
3	27/F	Ear fullness	Posterior pharyngeal wall	+	-	-	+	12 mo	2HERZ/4HER/6HR
4	39/M	Hearing impairment	Rosenmuller fossa	-	-	-	+	6 mo	2HERZ/4HER
5	41/F	Hearing impairment	Posterior pharyngeal wall	-	-	-	-	6 mo	2HERZ/4HER
6	58/F	Foreign body sensation	Rosenmuller fossa	-	-	+	-	6 mo	2HERZ/4HER
7	24/F	Neck swelling	Posterior pharyngeal wall	+	+	+	-	18 mo	5HERZ/13HER
8	27/F	Sore throat	Rosenmuller fossa	-	-	+	-	9 mo	2HERZ/7HER

TB, tuberculosis; EPTB, extrapulmonary tuberculosis; H, isoniazid; E, ethambutol; R, rifampin; Z, pyrazinamide.

Ziehl-Neelsen staining for AFB or TB PCR and histologic characteristics representing granuloma enabled definite diagnosis of nasal and nasopharyngeal TB.<sup>7,8</sup>

Because of its rarity and nonspecific symptoms, the diagnosis of nasal and nasopharyngeal TB could be delayed. We suggest that ENT specialists should keep in mind that nasal or nasopharyngeal TB is a disease entity that needs to be considered in the differential diagnosis of sino-nasal inflammatory diseases in South Korea, which has intermediate TB burden of TB, and probably in Western country, which has high incidence of TB or extrapulmonary TB.

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