CASE REPORT

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Primary nasal tuberculosis*

A.K. Hup[1], T. Haitjema[1], G. de Kuijper[2]

[1] Dept. of Pulmonology, Medical Centre Alkmaar, The Netherlands
[2] Dept. of Otorhinolaryngology, Medical Centre Alkmaar, The Netherlands

SUMMARY

We present a case of a patient with primary nasal tuberculosis. Although this is a rare finding, it should be considered when a patient presents with a nasal obstruction. Smears for acid fast bacilli and cultures tend to be negative in nasal tuberculosis. Diagnosis is often based on histo- pathologic findings. Nasal TB is known to respond well to the regular treatment for (pulmonary) tuberculosis.

Key words: extra-pulmonary, nasal, tuberculosis

INTRODUCTION

Nasal tuberculosis is a rare finding. Tuberculosis usually affects the lungs, causing focal granulomatous inflammatory reactions with central caseous necrosis. However, extra-pulmonary tuberculosis does occur in 15% of all patients with tuberculosis (Pust, 1992). Butt reviewed the English-language medical literature and found 35 cases of nasal tuberculosis during the twentieth century (Butt, 1997). Primary nasal tuberculosis was found in only 12 of the 35 cases reviewed. We would like to present a patient with primary nasal tuberculosis.

CASE REPORT

The person concerned is a healthy, vital 89-year old woman who had regular check-ups because of her chronic eustachian tube dysfunction with impaired hearing. In her thirties, she has had a radium implantation in the left nasal cavity because of this problem. Otherwise her medical history is unremarkable. In July 1998, medical examination revealed a partial obstruction in the inferior meatus of the left nasal cavity just anterior to the head of the concha inferior. An x-ray and a CAT-scan of the sinuses were performed and a biopsy of the nasal mass was taken, to rule out a malignancy. The x-ray showed no remarkable findings. The CAT-scan (Figure 1) showed a tumor in the left nasal cavity near the nasal bone. Histopathologic examination showed a granulomatous inflammation, with local necrosis, consistent with tuberculosis (Figure 2). A smear for acid fast bacilli (AFB) of this material was negative, but an amplification method (MTC) with ribosomal RNA as target (Vlaspolder et al., 1995) showed *Mycobacterium tuberculosis* complex and the culture was positive for *Mycobacterium tuberculosis*. This particular strain had never been detected before and was sensitive to all tuberculostatics. Our patient could not recall having ever been exposed to tuberculosis. She had no physical complaints. Laboratory results were within normal limits, and a chest x- ray did not show any abnormalities suspect for tuberculosis. Since no evidence of pulmonary or systemic tuberculosis was found, the patient was diagnosed with primary tuberculosis in the left nasal cavity. Three months after initiation of tuberculostatics (INH, rifampin and pyrazinamid) inspection of the nasal cavity showed a normal mucosa without signs of the former lesion. PPD skin testing or chest x-ray among 7 family-members and friends revealed no other cases of tuberculosis.

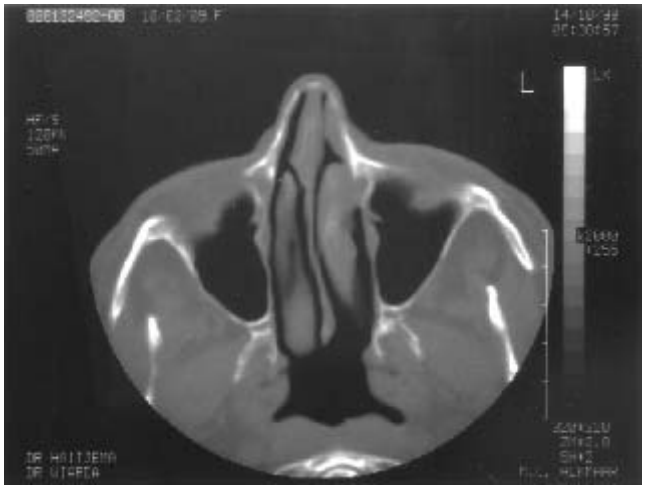

Figure 1. Circumscript, small mass in the left nasal cavum, without bone destruction.

DISCUSSION

(Primary) nasal tuberculosis is a rare finding. In the Netherlands, 1486 cases of TB were reported in 1997. Only four of those patients had TB in the mediastinum, nasopharynx, nose

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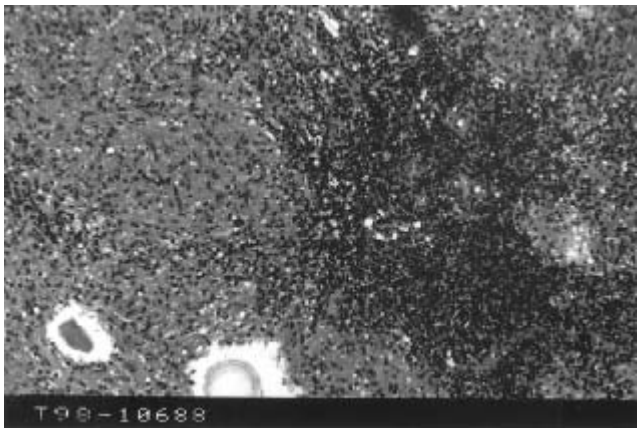

Figure 2. Multiple non-caseous, epitheloidcell granulomata's.

or sinuses (KNCV, 1999). In over 75% of persons with nasal TB, there is generalized disease (Johnson et al., 1995). Warn-dorff (Warndorff et al., 1996) expected that in patients with pulmonary TB some bacilli would be present in the nasal cavity. PCR on nasal swabs taken from patients with pulmonary TB and their contacts, showed that M.tuberculosis can be found in the nose of one-third of (sputum) smear-positive patients. He also suggested that bacilli might be detected in some household contacts of patients. Primary nasal tuberculosis may be caused by inhalation of infected particles or traumatic digital inoculation (Goguen and Karmody, 1995). Case reports have been presented about a patient with nasal TB following radiotherapy (Chua et al., 1998), and about a patient who had had septoplasty (Johnson et al., 1995). It may be expected that inoculation of *Mycobacterium tuberculosis is* facilitated by previous trauma to the nasal mucosa. A healthy nose is protected from inoculation of (Myco) bacteria by ciliary movement, the bactericidal action of the nasal secretions, and filtering provided by the nasal vibrissae (Goguen and Karmody, 1995). One of the problems in diagnosing this rare manifestation of tuberculosis is the fact that smears for acid fast bacilli and cultures (Goguen and Karmody, 1995; Chua et al., 1998) tend to be negative. According to Goguen cultures are negative in up to 50% - 75%. In our patient a smear for AFB was negative. However, MTD and culture were both positive for *Mycobacterium tuberculosis*. Nasal TB is known to respond well to the regular treatment for (pulmonary) tuberculosis, as is illustrated by our patient.

CONCLUSION

Nasal tuberculosis is a very rare finding. However, it is definitely a diagnosis to consider when a patient presents with nasal obstruction as is illustrated by this and other case-reports. The symptoms of nasal tuberculosis may mimic those of a malignancy. When a malignancy is suspected, a biopsy must always be taken and sent for AFB, culture and PCR or another amplification method. However, often the diagnosis is based on the histopathologic finding of a granulomatous inflammation. Nasal TB responds well to tuberculostatics.

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A.K. Hup
Department of Pulmonology,
Medical Centre Alkmaar
Wilhelminalaan 12,
1815 JD Alkmaar,
The Netherlands
Tel.: +31-72-5484444 (#5417)
Fax: +31-72-5482167