BRIEF COMMUNICATION

Pharyngeal Tuberculosis: Report of 5 Cases

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Abstract Tuberculosis is a public health problem for many countries, whether rich or poor. Extranodal ENT locations are rare, and it prevails in the cavum in the pharyngeal region. Based on a 3-year retrospective study of 5 clinical cases, the authors aim to highlight the epidemiological, clinical, radiological, therapeutic and prognostic aspects of this disease. Clinical aspects are not specific and there is often confusion in the differential diagnosis with tumoral lesions. Positive diagnosis is guided by the clinical and the radiological findings, confirmed by histology.

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Tuberculosis faríngea: 5 casos clínicos

Resumen La pandemia tuberculosa supone un problema de salud pública para muchos países, ya sean ricos o pobres. Su localización ORL extraganglionar es poco frecuente, y en la región faríngea predomina en el cavum. En un estudio retrospectivo sobre 3 años, se intentan poner de relieve, a través de 5 casos clínicos de tuberculosis faringea, los aspectos epidemiológicos, clínicos, radiológicos, terapéuticos y pronósticos de esta enfermedad. Sus aspectos clínicos no son específicos, y suelen prestarse a confusión con afección tumoral. El diagnóstico positivo se orienta por los datos clínicos y radiológicos y se confirma por anatomopatología.

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Introduction

Tuberculosis continues to be tenacious worldwide. In 2011, 8.7 million people developed it and for 1.4 million it was lethal (WHO). It attacks poor countries but continues to arouse fears in developed countries as multi-resistant strains are re-emerging. Extranodal ENT locations are rare and clinical expression is inherent to the affected organ. The pharynx and especially the cavum are among the most common extranodal locations. There may be confusion in the differential diagnosis with tumoral lesions. Diagnosis is guided by clinical and radiological symptoms or incidentally by histological analysis.

Methods

This retrospective study from 2008 to 2010 presented the cases of patients with ENT primitive extranodal tuberculosis. Diagnosis was confirmed by anatomopathology and the clinical reports were collected and analysed by the Radiology Service. Initially, there were 15 cases of extranodal tuberculosis in the ENT region, but as the study was exclusively focused on the cavum, 10 cases were removed from our series.

Data were classified according to the following criteria:

- Epidemiological: gender, age, vaccines, history of tuberculosis.
- Clinical symptoms: ENT symptoms, general health, fever, other tubercular location.
- Endoscopic: masses, ulcerations.
- Paraclinical: analytical, radiological, bacteriological in search of acid-fast resistant bacilli, by direct examination and by Lowenstein medium culture. Anatomopathological studies searching for Langhan cell granulomas with caseous necrosis.
- Therapeutic methods: medical and surgical.
- Evolution and prognosis.

Results

A three year follow-up period of five patients with cavum tuberculosis (Table 1).

The intradermoreaction of tuberculin tested positive in 5 patients. The CRP was raised for 4 and the haemogram showed hyperleucocitosis in 4 cases.

Chest X-rays were normal for all patients.

CAT imaging showed:

- Lesional process of the right posterolateral wall of the rhinopharynx and retropharyngeal lymph nodes in 2 cases (Fig. 1).
- Lesional process in all cavum walls spread to choana, with constriction of the fossas of Rosenmuller (Fig. 2).
- Extensive right parapharyngeal bulging, spreading to the right piriform sinus, with complete vocal cords (Fig. 3).

Tests for confirmation of diagnosis:

Histological and/or bacteriological confirmation was necessary to confirm positive diagnosis. There was a presence of tubercular granuloma or acid-fast resistant bacilli both from

![Figure 1](image1.png)

**Figure 1** Tumour spread of the right posterolateral cavum wall and retropharyngeal adenopathies.

![Figure 2](image2.png)

**Figure 2** Lesion has spread to all cavum walls, filling the fossas of Rosenmuller, spreading to the choanae without bony lysis, but with air bubbles trapped in the tissue.

![Figure 3](image3.png)

**Figure 3** Right parapharyngeal enlargement, filling the right pyriform sinus but with vocal cords intact.
Table 1  Summary of Patient Characteristics.

<table>
<thead>
<tr>
<th></th>
<th>Patient 1</th>
<th>Patient 2</th>
<th>Patient 3</th>
<th>Patient 4</th>
<th>Patient 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, in years</td>
<td>25</td>
<td>31</td>
<td>36</td>
<td>44</td>
<td>50</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td>Location of lesion</td>
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<td>Overall bulging of the cavum</td>
<td>Bulging of ulcerous mass of left posterolateral cavum wall</td>
<td>Bulging of posterolateral right cavum wall</td>
<td>Male parapharyngeal bulging</td>
</tr>
<tr>
<td>Initial symptoms</td>
<td>Nasal obstruction and purulent unilateral rhinorrea</td>
<td>Nasal obstruction and purulent bilateral rhinorrea. Conduction hearing loss</td>
<td>Nasal obstruction and epistaxis.</td>
<td>Nasal obstruction and unilateral purulent rhinorrea</td>
<td>Dysphagia</td>
</tr>
<tr>
<td>Radiological Findings</td>
<td>Lesional process of the right posterolateral wall of the rhinopharynx and retropharyngeal adenopathies</td>
<td>Lesional process of all Cavum walls to choanas, with constriction of the fossas of Rosenmuller</td>
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<td>Posterior right wall and rhinophraynx adenopathy</td>
<td>Extensive right, parapharyngeal bulging, spreading to right periform sinus, with complete vocal cords</td>
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<td>2RHZ/4RH Favourable</td>
<td>2RHZ/4RH Favourable</td>
<td>2RHZ/4RH Favourable</td>
<td>2RHZ/4RH Favourable</td>
<td>2RHZ/4RH Favourable</td>
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direct examination and Lowenstein medium culture. Testing for BK in sputum and in gastric juices showed negative in all cases.

The histological study confirmed the diagnosis for all patients. The cultures showed that all strains were *Mycobacterium tuberculosis*.

When it is unifocal and with no complications extranodal ENT tuberculosis belong to class II of the prevailing protocol and all patients therefore received antibacilar drugs for 6 months in accordance with protocol 2RHZ/4RH (2 months of Rifampicin, Isoniazid y Pyrazinamide and 4 months of Rifampicin and Isoniazid).

All patients were declared cured after 18 months. A check-up took place 3 months after treatment terminated which showed the regression of clinical, endoscopic and radiologic symptoms. Control biopsies with histological studies showed an absence of lesions with no histological signs of malignancy.

### Discussion

The 2012 WHO report on combating tuberculosis throughout the world is the most recent source of information on this pandemic. The report was based on data communicated by 204 countries, accounting for over 99% of worldwide cases of tuberculosis. According to this report, 8.7 million new cases were declared in 2011, of which 13% were co-infected by HIV. 1.4 million people died from tuberculosis and 430,000 were seropositive. They were generally young adults, although all age ranges were present. 95% of deaths occurred in developing countries.

Pharyngeal tuberculosis is less frequent from the use of modern antibacilar drugs and vaccines. Tuberculosis of the pharynx may mimic a cancer, and it is therefore important not to start an anti-cancer treatment if there has been no histological confirmation of malignancy. Lesions are heterogeneous at the third pharyngeal layer level, with a net predominance of nasopharyngeal or cavum lesions.

The frequency of cavum tuberculosis is appreciated diversely in medical literature.

In 1930, Graff published the results of systematic cavum examination practised on 118 patients with evolutive pulmonary tuberculosis. He confirmed that 36% of them presented with macroscopic lesions suggestive of tuberculosis, with histological confirmation in 82% of cases (Table 2).

In 1940 Hollender carried out the autopsy of 24 patients with active pulmonary tuberculosis and concluded that 18 of them had nasopharyngeal tuberculosis. This indicates that the low frequency of cavum tuberculosis standing out in recent publications would be misleading, particularly in countries with high prevalence.

Cavum tuberculosis is observed in young patients (from 20 to 30 years of age), with predominance in females.

Its predominance in northern Africa and Asia has been reported in several publications and according to literature the tubercular context does not appear in half of the cases.

Clinical aspects of primitive cavum tuberculosis are not specific and often mimic tumours. Clinical symptoms are similar to nasopharyngeal carcinoma, with unilateral cervical lymph nodes, homolateral nasal obstruction, epistaxis, purulent rhinorrhea and a runny nose afterwards, hearing loss due to seromucinous otitis, etc.

In our series we found 2 cases with cervical adenopathies associated with bilateral nasal obstruction and one case of epistaxis.

The endoscopy enabled visualisation of the different macroscopic aspects: ulcerations, irregular glandular swellings, irregular mucosa hypertrophy or of the adenoid glands. All of these aspects suggest a malignant tumour initially. Multiple biopsies show the epithelioid granuloma with caseous necrosis or resistant acid-fast bacilli, thus confirming diagnosis.

CAT scans shows the lesion, although they neither confirm or rule out positive diagnosis, since the findings are usually non specific. A scan would also rule out the signs suggesting a malignant process (bony lysis, invasion of deep spaces). Accurate lesion mapping may be made, with would, for example, show the pharyngeal extension of a cervical rachis lesion (Pott disease).

The CAT scan revealed cervical lymphatic nodes, mainly Gillette retropharyngeal nodes. Another of its advantages is that possible biopsies or even treatment may be guided by the scan. However, positive diagnosis is based on both the biopsy and the culture.

In our series 4 of the patients had a CAT scan. The chest X-rays tested normal for all patients because in general it was usually primitive cavum tuberculosis.

The search for BK in sputum usually test negative. Kharoubi only found BK in the sputum of one patient out of 7. In our series it tested negative in all patients. Diagnosis is mainly based on pathological anatomy. The biopsied specimens must be subjected to bacteriological study: culture and antibiogram. Differential diagnosis is made with the tumoral disease whenever tuberculosis does not immediately appear.

Treatment is mainly based on 5 types of anti-tuberculosis drugs: isoniazid 5 mg/kg/day, rifampicin 10 mg/kg/day, streptomycin 15 mg/kg/day, pyrazinamide 25 mg/kg/day and etambutol 20 mg/kg/day.

Treatment commences in strict collaboration with the Pneumology Unit which in this centre is the benchmark for tuberculosis.

When the disease is unifocal with no complications, the extranodal ENT tuberculosis is treated according to protocol 2RHZ/4RH (as occurred with all of our patients).

Surgical treatment is rarely necessary. Lymphadenectomy would eliminate the cervical nodes in complicated cases: abscesses, fistulas, persistent lymphadenopathy after medical treatment. Pharyngeal surgery is exceptional and is indicated for dealing with upsetting sequelae: i.e. velopharyngeal stenosis, velar perforations, synechias, etc.

Medical treatment usually leads to a favourable outcome. Symptoms and inflammatory and weeping lesions disappear after one month of treatment. Other types of lesions take longer to disappear.

Failure to improve or recurrence necessitates endoscopic and histologic control, as this could indicate the appearance of a cancer.

In our series control of all patients was carried out 3 months after treatment was terminated. All patients presented with both endoscopic and radiologic remission.
Biopsies with anatomopathologic testing showed a sterilisation of the lesions and there was no histologic evidence of malignancy. All patients were declared as cured after 18 months.

**Conclusion**

Tuberculosis continues to be a worldwide public health problem. This endemic disease continues to be current due to its re-emergence on association with HIV, and equally for its increase in multi-resistant strains of *M. tuberculosis*. Extranodal ENT tuberculosis is rare. Pharyngeal tuberculosis predominates in the cavum, and treatment usually leads to a favourable outcome.

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**Conflict of Interests**

None.

**References**