Case presentation:

A 16 year old girl, previously healthy, presented with a 6 month history of a slowly growing left neck mass. She had no dyspnea, dysphagia, weight loss, cough or change in voice quality. The patient recalled a previous episode of low-grade fever, during the time period in which the left neck mass was present, for which she received a course of antibiotics. Although the fever subsided, the mass persisted. As a result, she was referred to our medical center.

On physical examination she had a 10 x 6 cm left neck mass extending from the angle of mandible to clavicle, firm, non tender with no overlying skin changes (Figure 1). Multiple bilateral small lymph nodes were palpable. A CT scan was done and revealed a 10x6x5 cm left heterogeneous neck mass, with several areas of cystic necrosis, compressing the internal jugular with several small lymph nodes (Figure 2).

Findings of other investigations were as follows: (a) CBC was benign, (b) ESR= 61, (c) serology for Toxoplasma and Bartonella was negative, (d) PPD test was positive, and (e) chest X-ray was clear. FNA revealed histiocytes and multinucleated giant cells; no malignant cells were present. A culture of the fluid revealed no bacterial growth.

The patient was started on anti-tuberculous treatment (4 drug) and then underwent excision of the neck mass. She developed dehiscence of the wound and was treated with compressive dressing.

DIAGNOSIS: Mycobacterial cervical lymphadenitis.
Discussion:

Cervical lymphadenitis is the most common manifestation of mycobacterial infections in the head and neck. The incidence of mycobacterial cervical lymphadenitis has increased in parallel with the increase in the incidence of mycobacterial infection worldwide [1]. It can be a manifestation of a systemic disease or primary disease in the neck.

Mycobacterium species involved can be divided into two subtypes: the tuberculous mycobacteria and nontuberculous mycobacteria (NTM) or atypical mycobacteria. Ten percent of patients present with a fluctuant mass and 5% present with a draining sinus [2,3]. The skin overlying the lesion may appear erythematous or violaceous and may be tender to palpation [4]. Fistula is more common in tuberculous lymphadenitis than those caused by atypical mycobacteria. Cervical adenitis due to NTM is primarily a disease of childhood, and usually presents as a unilateral mass or draining sinus [5,6]. Typically, primary infections mostly by contamination through the respiratory tract; however, the oral mucosa or gingiva may be the port entry for atypical strains.

The differentiation of tuberculous from NTM cervical lymphadenitis is important because their treatment protocols are different (Table 1).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Tuberculous</th>
<th>Nontuberculous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical lymphadenitis</td>
<td>Posterior, supraclavicular,</td>
<td>Enlarging mass around the</td>
</tr>
<tr>
<td></td>
<td>multiple, bilateral</td>
<td>mandible</td>
</tr>
<tr>
<td>Constitutional symptoms</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>(fever, weight loss, fatigue)</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>History of tuberculosis or</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>tuberculous contact</td>
<td>Adulthood</td>
<td>Childhood</td>
</tr>
<tr>
<td>Fistula formation</td>
<td>Usually positive</td>
<td>Intermediate, negative</td>
</tr>
<tr>
<td>Age</td>
<td>Signs of active or previous</td>
<td>Normal</td>
</tr>
<tr>
<td>PPD</td>
<td>tuberculous infection</td>
<td></td>
</tr>
<tr>
<td>Chest X-ray</td>
<td></td>
<td></td>
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</tbody>
</table>

Table 1. Clinical clues to differentiate between tuberculous and nontuberculous cervical adenitis [1].

Diagnosis of atypical mycobacteria is made after a high index of suspicion, a thorough history and physical exam, a PPD test, staining for acid-fast bacilli, radiologic examination, and fine-needle aspiration (FNA) [7,8]. Definite diagnosis
is made by culture, PCR and pathologic examination. The PPD test is the principal diagnostic test, as it may be positive in 49.4% in mycobacterial cervical lymphadenitis [9]. Positive results could be obtained in the majority of tuberculous infections whereas the result is mostly negative or intermediate in nontuberculous infections. FNA can detect cervical tuberculous lymphadenitis in 25–77% of cases, and NTM in 52.9%. It is a sensitive, specific and cost effective method for the diagnosis, especially in children [1]. The culture is diagnostic but a negative culture does not exclude the diagnosis. Mycobacterial cervical lymphadenitis is caused by tuberculous mycobacteria in 64% and nontuberculous mycobacteria in 36% of cases [9].

The radiological workup may include a chest X-ray, CT and MRI of the neck. The chest X-ray may reveal findings of tuberculosis in cases due to tuberculous infections, and it is usually clear in atypical infections. CT may reveal the presence of conglomerated nodal masses with central lucency, a thick irregular rim of contrast enhancement and inner nodularity with a varying degree of homogeneous enhancement in smaller nodes, and a diffusely effaced fascial plane that may suggest mycobacterial cervical lymphadenitis [10,11]. MRI may reveal discrete, matted and confluent masses with necrotic foci that are more frequently peripheral rather than central [12].

In terms of treatment, a tuberculous infection usually responds very well to antituberculous chemotherapy, whereas a NTM infection may require a surgical intervention [13,14]. Surgical intervention for tuberculous adenopathy is considered when an excisional biopsy is needed for diagnostic purposes or when a node remains enlarged after antimicrobial therapy. Surgery can be aspiration, incision and drainage, curettage or complete excision. Excision of the overlying skin should be performed when the skin is involved. Curettage is indicated in case of proximity of the lesion to a nerve or severe involvement of the skin.

REFERENCES: