

CASE REPORT

## Pediatric Tularemia presenting with a neck mass

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### ABSTRACT

An eight-year-old patient admitted with a suspected neck mass who was diagnosed tularemia is presented in this report. The patient's family was seasonal agricultural workers in a village of Yozgat province of Turkey. In admission, presenting symptoms were fever and painful neck mass in left cervical region. Tularemia was diagnosed with serologic tests and the lesion well responded to streptomycin. In patients presented with fever and neck mass, tularemia must be kept in mind in differential diagnosis and specific tests should be done especially in patients living or working in rural areas. *J Microbiol Infect Dis* 2011;1 (2): 73-74

**Key words:** Tularemia, neck mass, childhood

### Boyunda kitle ile başvuran pediatrik Tularemi vakası

#### ÖZET

Boyunda şüpheli bir kitle ile başvuran ve sonrasında tularemi tanısı konulan sekiz yaşında bir hasta sunuldu. Hastanın hikayesinden ailesinin Yozgat'a bağlı bir köyde mevsimlik tarım işçisi olarak çalıştıkları öğrenildi. Başvuru sırasında ateş ve sol servikal bölgede ağrılı kitle semptomları ile başvurdu. Tularemi tanısı serolojik testler vekonuldu olgu lezyonun streptomisine tedavisine iyi cevap çok vermesiyle konuldu. Ateş ve boyunda kitle yakınmaları ile başvuran ve özellikle kırsal bölgelerde yaşayan veya çalışan hastalarda ayırıcı tanıda tularemi mutlaka düşünülmeli ve gerekli özgül tanısall testler yapılmalıdır.

**Anahtar kelimeler:** Tularemi, boyunda kitle, çocukluk çağı

#### INTRODUCTION

Tularemia is an infectious disease characterized with fever and lymphadenopathy caused by *Francisella tularensis*, a gram (-) aerob bacterium.<sup>1</sup> *Francisella tularensis* infects humans via direct contact with infected animals, arthropod bites (especially mosquito and tick), ingestion of contaminated food and water or inhalation of infected dust or aerosol. The most common presentation is either oropharyngeal or ulceroglandular form among the six clinical forms.<sup>2-4</sup> Tularemia epidemics were reported from various villages in different parts of Turkey, especially from Marmara, West Black Sea and Central Anatolia regions.<sup>5-11</sup> We aimed to report a tumor suspected case, because of presentation with a large neck mass.

#### CASE

An eight-year-old boy was admitted with fever and chills continuing for 20 days. Three days af-

ter the initiation of fever two painful swelling on the left side of the neck was detected his parents. Upon admission to a local doctor the patient had been prescribed oral ampicillin-sulbactam for 10 day course. No clinical improvement was seen. The patient had been referred to our unit (Pediatric Oncology) with a suspected neck mass unresponsive to empirical  $\beta$ -lactam antibiotic treatment.

In his history, it was learnt that the patient and his family were seasonal agricultural workers in a village of Yozgat province (central part of Turkey) and they supplied the drinking water from a nearby river in which animals also drink it. His temperature was 37.0 0C, heart rate 86 beats/minute and blood pressure 110/70 mmHg. Physical examination revealed a left submandibular lymph nodes package. Their size was approximately 5x4 cm and fistulas to the skin was seen in two localizations (Figure 1). There was no mass or

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organomegaly other than the submandibular region. In laboratory examination, white blood cell count was 15,300/mm<sup>3</sup>, erythrocyte sedimentation rate 11 mm/hour, C-reactive protein 12.3 mg/dl (Normal: 0-5 mg/dl). Peripheral blood smear and chest X-ray were normal.

Cervical region sonography showed two adjacent heterogenous solid mass, each 26x15 mm in size with central necrosis in left submandibular region extending to the inferior auricular region. Francisella tularensis microagglutination test was positive in 1/640 titer. With a diagnosis of oropharyngeal tularemia, Streptomycin was started intramuscular 20 mg/kg/day. Ten days later the weeping was stopped and lymph nodes showed a dramatic regression. He was discharged at the end of 14 days without any complication. He is well and disease free for the next 10 months.



**Figure 1.** Submandibular package of lymph nodes with fistulization to the skin

## DISCUSSION

It was known, most of tularemia cases presented in oropharyngeal forms.<sup>2-4</sup> Tularemia is an endemic disease in some provinces of Turkey. Especially some north-west Anatolian provinces have been affected. Most of tularemia cases were reported from different regions as sporadic cases. On the other hand some small outbreaks occurred in areas around Bursa, Çankırı, Sakarya, Tokat and Düzce provinces.<sup>5-11</sup> Tularemia did not reported from Diyarbakir province and other south-eastern provinces of Turkey.

The early administration of streptomycin, tetracycline, doxycycline or chloramphenicol (before the third week of disease) was found to be effective to resolve the infection.<sup>1</sup> Our patient and his family were seasonal agricultural workers in a rural area of Turkey, and they supplied the drinking water from a nearby river in which animals also drink water. Probably the patient got the disease from contaminated water. It was learnt that some other people from the region also manifest signs and symptoms of tularemia. In patients infected with *Francisella tularensis*, if a detailed history is not taken from the family and the presumptive diagnosis of tularemia is not considered, delay both in diagnosis and treatment is inevitable. In diagnosis of tularemia, serologic tests are accepted as gold standard but anamnesis is a useful contributor.

As a conclusion, when patients presented with fever and neck mass, tularemia must be kept in mind in differential diagnosis and specific tests should be done especially in patients living or working in rural areas, or in patients with a history of travel to the regions endemic for tularemia.

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