

Ömer BAYIR
Gülezer SAYLAM
Emel ÇADALLI TATAR
Ali ÖZDEK
Hakan KORKMAZ



CASE REPORT

TULAREMIA PRESENTING AS HYPOPHARYNGEAL CARCINOMA IN AN ELDERLY PATIENT

ABSTRACT

Tularemia is a zoonotic disease and it may have fatal consequences, especially in geriatric patients. Named as rabbit fever, lemming fever and deer fly fever, it may present as ulceroglandular, oculoglandular, pneumonic, oropharyngeal, gastrointestinal, and typhoidal tularemia but hypopharyngeal tularemia has not been reported previously. We report a 72 year old man with hypopharyngeal tularemia who presented with an ulcero-vegetative lesion of pyriform sinus and cervical lymph nodes. Our initial diagnosis was hypopharyngeal carcinoma but the biopsy of the lesion was reported as granulomatous necrotizing infection. Serologic examination revealed hypopharyngeal tularemia and he was treated with ciprofloxacin and doxycycline. We believe that tularemia must be considered in the differential diagnosis of the hypopharyngeal lesions, especially in endemic regions and elderly patients.

Key Words: Tularemia; Francisella Tularensis; Hypopharyngeal Neoplasms; Lymph Nodes.



OLGU SUNUMU

YAŞLI HASTADA HİPOFARENGEAL KARSİNOMU TAKLİT EDEN TULAREMİ

Öz

Tularemia zoonotik bir hastalık olup bilhassa yaşlı hastalarda ölümcül sonuçlara neden olabilir. Dünyanın çeşitli yerlerinde tavşan ateşi, yaban sıçanı ateşi ve sinek ateşi olarak ta adlandırılır. Tulareminin klinik olarak ülseroglandüler, gastrointestinal, pnömonik, gastrointestinal, tifoidal ve orofaryngeal formları olup literatürde daha önce hipofarengel tularemi tanımlanmamıştır. Bu yazıda, piriform sinüste ülserovejetan lezyon ve servikal lenfadenopati ile kendini gösteren hipofarengel tularemili 72 yaşında erkek hasta sunulmuştur. Ön tanı olarak hipofarengel karsinom düşünülen hastadan alınan biopsi sonucu nekrotizan granülomatöz lezyon olarak raporlandı. Yapılan serolojik tetkikler sonucunda tularemi tanısı konan hastaya tedavi olarak peroral siprofloksasin ve doksisisilin verildi. Tularemi, özellikle endemik bölgelerde boyunda lenf nodu ile birlikte seyreden hipofarengel lezyonların ayırıcı tanısında düşünülmelidir.

Anahtar Sözcükler: Tularemi; Francisella Tularensis; Hipofarengel Karsinom; Lenf Nodları.

İletişim (Correspondance)

Ömer BAYIR
Ministry of Health Diskapi Yildirim Beyazit Training and
Research Hospital Otolaryngology, Head and Neck Surgery
Department ANKARA

Tlf: 0312 318 66 90
e-posta: bayiromer@hotmail.com

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Ministry of Health Diskapi Yildirim Beyazit Training
and Research Hospital Otolaryngology, Head and Neck
Surgery Department ANKARA



INTRODUCTION

Tularemia is an uncommon zoonotic disease caused by *Francisella tularensis*. It is a non-spore-forming, non-motile, non-piliated pleomorphic gram-negative coccobacillus (1-3). This bacterium is naturally a pathogen of rodents and lagomorphs, and humans can be infected accidentally. Human-to-human spread occurs only occasionally (4). The source of the infection is often infected water, contact to contaminated soil, or bites of arthropods carrying the microorganism which lead to ulceroglandular tularemia. Ulceroglandular disease is the most common form of tularemia. The other rare forms of presentation are glandular, oculoglandular, pharyngeal, typhoidal, or pneumonic Tularemia. (1-3). We report a tularemia case which presented with a hypopharyngeal lesion and cervical lymph nodes mimicking hypopharyngeal cancer.

CASE

A 72-year-old man presented with a two week history of progressive dysphagia and neck swelling on the left side and difficulty in oral feeding. He was a retired person living in the urban area and he had no history of animal contact, insect bite or visit to tularemia endemic regions. However, his drinking water was obtained from an endemic rural area. Initially, amoxicillin, was given by the family practitioner, but there was no improvement in his symptoms. With the progression of dysphagia and cervical swelling, he applied to our clinic. He had a 30 pack/year history of smoking. Flexible endoscopic examination revealed an ulcero-vegetative lesion of the left pyriform sinus, aryepiglottic fold and tongue base with enlarged lymph nodes (6x6 cm) on the left upper neck (Figure 1). Other physical examination and laboratory findings were non-specific, his temperature was normal and the white blood cell count was 9230/mm³. PA chest X-ray was normal, and neck computed tomography demonstrated the hypopharyngeal lesion and enlarged nodes on the neck (Figure 2). Based on the medical history and physical examination, the patient underwent direct laryngoscopy and biopsy with the possible diagnosis of hypopharyngeal cancer. The extension of the lesion was consistent with the preoperative evaluation. The histopathological examination was reported as granulomatous necrotizing infection. Then, further laboratory examinations were performed. The Rose Bengal test and brucella standard tube agglutination tests were negative. Tuberculosis skin test was 7 mm and consistent with the his-

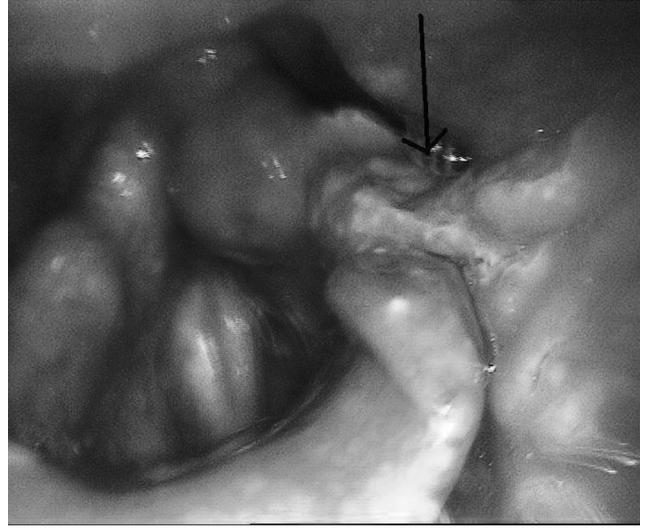


Figure 1— Flexible endoscopic examination, ulcero-vegetative lesion of the left pyriform sinus, aryepiglottic fold, tongue base (black arrow).

tory of BCG vaccination. *F. tularensis* tube agglutination test rate was >1/320 (normal range ≤1/160) and the final diagnosis was tularemia. The patient was treated with ciprofloxacin



Figure 2— Neck computed tomography, lymphadenopathy in the left upper cervical region with no abscess (white arrow).



(750 mg twice daily, oral) and doxycycline (100 mg twice daily, oral) for 4 weeks. After two weeks of therapy, his symptoms and findings improved significantly.

DISCUSSION

Francisella tularensis enters the host via skin cuts abrasions, mucosal membranes of the eye/ respiratory tract/ oropharynx, or by arthropods percutaneous inoculation (1-3). The most important source of infection is the water supply contaminated by rodents as these bacteria may remain alive in water for several months (1,4).

The clinical form of tularemia depends on the route of entry and the virulence of the microorganism. It may present as ulceroglandular, oculoglandular, pneumonic, oropharyngeal, gastrointestinal, and typhoidal tularemia. The most common type is the ulceroglandular form, which usually results from an arthropod bite or ingestion of infected water. Ulceroglandular tularemia is characterized by an enlarging ulcer at the site of inoculation, and massive regional lymph nodes that may suppurate (1-4). This type is characterized by 2 to 6 days (range 1 to 21 days) of incubation period, and the symptoms are non-specific such as fever, headache, sore throat, and myalgias (4,5). The mortality rate in untreated cases is estimated to be 5% (1,6). In the present case, our patient had hypopharyngeal ulcerovegetative lesion and enlarged neck nodes, but he had no fever, or cutaneous lesions. Our first impression was that, the patient had cancer. However, biopsy and further laboratory investigation revealed tularemia. Thus, the mainstay of diagnosis is strong suspicion.

It is difficult to culture and isolate *F. Tularensis* microorganism, and the diagnosis mainly relies on serology. Tube agglutination, microagglutination and enzyme linked immunosorbent assay tests are usually preferred for diagnosis. These tests become positive two weeks after the onset of the disease (1,4,6). *F. tularensis* is an intracellular pathogen like *Mycobacterium*, *Listeria*, *Legionella*, and *Brucella*. It may induce tissue changes indistinguishable from those seen in tuberculosis and brucellosis. The agglutination titers for diagnosis are considered to be >1/160 (tube agglutination), and 1/128 (microagglutination) (1,3,6). In the pathological examination of the tularemic lymph nodes or lesions, chronic granulomatous-type inflammation is observed. The pathogenic organism cannot be shown in tissue sections, but it can be recovered by culture. In the clinical practice, diagnosis is done by the combination of clinical features and serologic tests; where histopathologic examination, and culture may be complementary (5,7,8). Streptococcal tonsillitis, infectious

mononucleosis, diphtheria, tuberculosis, cat scratch disease, Lyme disease, rickettsial and fungal infections and malign diseases like lymphoma and leukemia should be considered in the differential diagnosis (5). Betalactams, cephalosporin and macrolides are not effective in the treatment of tularemia, but recent studies suggest use of quinolones, aminoglycosides and tetracyclines (6-9). We treated our patient with a four-week course of oral ciprofloxacin 750 mg twice daily and doxycycline 100mg twice daily, due to the high relapse rates with either drug alone. The general condition of the patient improved, hypopharyngeal ulcero-vegetative lesion and lymphadenopathy regressed within 2 weeks of therapy.

In conclusion, we presented a case of tularemia, which mimics hypopharyngeal carcinoma and to our knowledge no hypopharyngeal tularemia case was reported before in the literature in English language. We believe that the otolaryngologists should be familiar with different manifestations of head and neck tularemia. Tularemia should be considered in the differential diagnosis of neck masses, tonsillopharyngitis and hypopharyngeal lesions especially in endemic regions and elderly patients.

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