

Case Report



A Case of Thyroiditis Simulating Carcinoma Due To Brucella Melitensis

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ABSTRACT

We reported a case of a 27-year-old woman referred for evaluation of a painless thyroid mass suggesting a malignant thyroid tumor. The resected thyroidectomy material had been diagnosed as adenocarcinoma metastasis in a private pathology laboratory. Finally, the case had been diagnosed as a chronic inflammatory change secondary to suppurative Brucella thyroiditis. She had normal thyroid function. We have concluded that in endemic areas for brucellosis, the diagnosis of Brucella infection of the thyroid should be considered in non-febrile patients with cold nodules. ©2008, Fırat University, Medical Faculty.

Key words: Brucellosis, thyroid

ÖZET

Brucella Melitensis Nedeniyle Karsinoma Benzeyen Tiroidit Vakası

Bu çalışmada, tiroide ağrısız kitlesi bulunan ve malign tiroid tümör nedeniyle opere edilen 27 yaşında bayan hasta rapor edilmiştir. Tümör tanısıyla rezeksiyon yapıldıktan sonra materyalinin başka bir patoloji laboratuvarında incelenmesinde adenokarsinom metastaz tanısı verilmiş, ancak hastanın kapsamlı araştırılmasında tiroideki lezyonun süpüratif brucella tiroiditine bağlı sekonder kronik iltihabi değişiklikler olduğu anlaşıldı. Hastanın tiroid fonksiyonları normal sınırlarda izlendi. Brusellanın sık görüldüğü bölgelerde tiroide soğuk nodulu bulunan hastalarda Brucella tanısı hatırlanmalıdır. ©2008, Fırat Üniversitesi, Tıp Fakültesi

Anahtar kelimeler: Brucella, tiroid

Brucellosis is a zoonotic infection involving many systems. The sources of infection could be mainly different domestic animals such as sheep, cattle, goats and dogs. Transmission to humans occurs from direct contact via skin abrasions and mucous membranes or from the inhalation and ingestion of contaminated animal products, such as milk products and meat (1). Only 6 cases of Brucella thyroiditis have been reported, one in a Bengali man from Kuwait (2), two in foreigners working in Switzerland (3) and three cases from Iran. We have presented seventh case of Brucella infection of the thyroid, having an interesting history.

CASE REPORT

A 27-year-old woman from Diyarbakir rural area had admitted to a private hospital for arthralgia and a painful swelling of the anterior neck. Eight weeks ago, she suffered fever and left knee pain during a week. A history of consumption of local no pasteurized milk products had been elicited. Fever discontinued and she developed pain and tenderness in the thyroid area. A tough nonsensitive mass without redness or fluctuation, located in right lobe of thyroid, had been palpated. Thyroid sonography showed a hyperechoic mass 4x3 cm in dimension, having irregular borders located in right lobe of thyroid probable consistent with malignant tumor and later she had been operated due to right lobe mass of the thyroid. Scintigraphy revealed the typical cold area over the affected lobe.

The resected subtotal thyroidectomy material had been sent a private pathology laboratory and then diagnosed as adenocarcinoma metastasis from intestinal system. She had applied to the our hospital because of continuing her some symptoms, and been later investigated once more. Meanwhile, the paraffin blocks and slides have been sent our pathology department for consultation.

Pathologically the material has been investigated. Microscopically, adenoid structures and epithelial sheets varying in size within intense fibrous stroma surrounding irregular granulation tissue outside the abscess focuses within thyroid tissue have been seen. Finally the case was diagnosed as chronic inflammatory changes secondary to suppurative Brucella thyroiditis (Figure 1). Also, in detailed investigation, she had positive anti-Brucella agglutinins. Thyroid function tests were normal.

Streptomycine plus doxycyline was administered for two weeks to the patient. Because of the side effect of streptomycine, the treatment was discontinued. Then the treatment was continued with rifampin plus doxycyline for four weeks.

DISCUSSION

Brucellosis is a common zoonotic disease in some endemic areas in Turkey. However, brucella infection of the thyroid is very rare. Morbidity of brucellosis is rather high, but its mortality is extremely low in our country (4,5).

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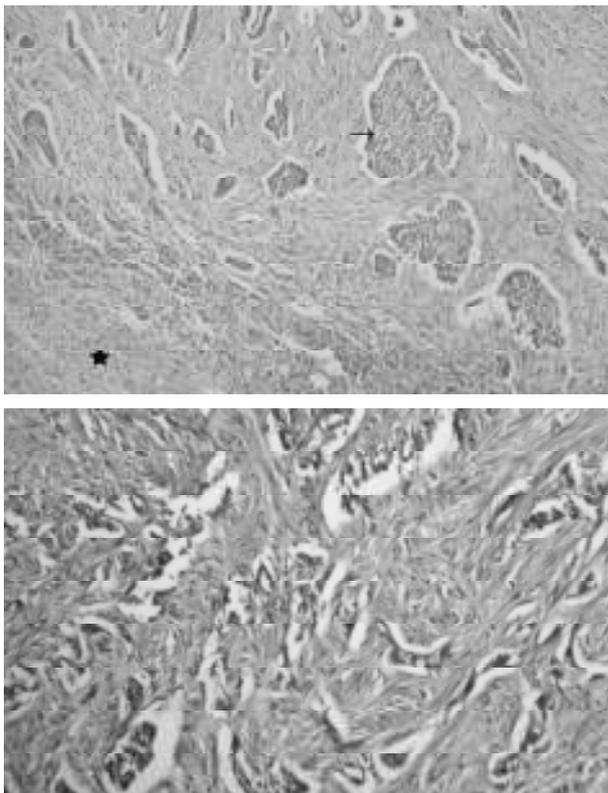


Figure 1. a. Epithelial sheets varying in size (arrow) within intense fibrous stroma surrounding granulation tissue (star) H&E, x100. **b.** Irregular epithelial cords like carcinoma infiltration H&E, x200.

Brucellosis in humans results from occupational contact with an infected animal or by ingestion of dairy products. The organism is a facultative intracellular parasite that may invade any organ with different manifestations and some complications (6).

Of the reported six cases, four are females and 2 males with age range of 22-60 years. The onset of symptoms has not been as abrupt as other causes of suppurative thyroiditis; however, patients have presented with fever, anterior neck pain, and constitutional symptoms of bacterial toxicity. Arthralgia, splenomegaly, lymphadenopathy and hepatomegaly were present in some. All had positive anti-Brucella agglutinins and in 4 patients following 2-mercaptoethanol treatment, diagnostic titers were detected (2,3,5). Our patient had the history of painful swelling of the anterior neck and nonspecific systemic symptoms such as mild fever. Because

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the other findings were consistent with malignancy, brucellosis was not suspected.

Microscopically, the epithelial sheets within intense fibrous tissue may cause pathologist to overdiagnose as in this case. The morphologic changes causing misdiagnosis similar to this one have not been reported in any of six cases previously reported. The patient was treated with classical anti-brucella drugs.

The Kuwaiti patient had a characteristic history of brucellosis in which thyroid swelling followed the onset of fever and *B. melitensis* was cultured from blood (2,7). However, the negative blood cultures and relatively low agglutinin titers in one of two patients have been reported by Von Graevenitz A, et al. (3). This result probably indicated subacute brucellosis (8).

Seventy-five percent of cases of thyroiditis have showed normal thyroid function as in our case (9). Scintigraphy revealed the typical cold area over the affected lobe.

Fine needle aspiration cytology is an effective means of diagnosis for bacterial infection of the thyroid (7). Of the six reported patients, cultures from thyroid aspirate in 4 and fistula cultures in one grew the Brucella organism. Bacterial culture was not made in our case, because the patient did not have the clinic of the suppurative thyroiditis. Positive blood culture also aids the diagnosis (6).

In physical examination, a tender thyroid nodule could be detected in 5 out of 6 patients. All had positive anti-Brucella agglutinins and in 4 patients following 2-mercaptoethanol treatment, diagnostic titers were detected. A firm and nontender mass 4x3 cm in dimension, located in right lobe of thyroid had been palpated in our case. Thyroid sonography showed a hyperechoic mass having an irregular border, consistent with malignant tumor. Splenomegaly and hepatomegaly were present, but arthralgia and lymphadenopathy were not present in our case.

Classical treatment for brucellosis, including drugs such as tetracycline, streptomycin, cotrimoxazole, rifampin, and doxycycline, are effective in cure of Brucella infection of the thyroid.

We conclude that in endemic areas for brucellosis, the diagnosis of Brucella infection of the thyroid should be considered in non-febrile patients with cold nodules. The case presented in this report is, also, interesting in that this is the first case thyroid mass clinically suggesting a malign tumor and pathologically causing overdiagnosis due to Brucellosis.

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