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Brucellar Spondylodiscitis In a Critically Ill Patient With Paraparesis

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1. Introductıon

Brucellosis, is a systemic infection disease that is caused by Brucella bacteries. Bacteries cause infection by ingestion of unsterilized milk or meat of infected animals, close contact with their secretions, inhalation of infected aerosol or inoculation to conjunctivas (1, 2). A genus of Gram-negative bacteria, non-motile, non-encapsulated coccobacilli brucella bacteries causes symptoms 1-3 weeks after entering into the body (2). The disease generally begins with weakness, fever, sweating, hepatosplenomegaly, lymphadenopathy, pancitopenia, osteoarticular (back pain, arthiritis, arthralgia, myalgia) and rarely respiratory system (coughing, bronchopneumonia, pleural effusion) symptoms and sings (2-6).

In literature, there has not been reported a case before that had acute respiratory failure (ARF) due to brucellosis and was mechanically ventilated. Here we reported a case who admitted to intensive care unit (ICU) with symptoms of ARF and was mechanically ventilated and difficulty of walking and whose diagnose was found as pneumonia and spondylodiscitis due to Brucella spp. during differential diagnosis.

2. Case Report

An 81 years old male patient with history of chronic obstructive pulmonary disease, chronic atrial fibrillation, ICU stay for four days with diagnosis of pneumonia one year ago (mask oxygen therapy and antibiotherapy (ampiciline-sulbactam and clarithromycin)) and upper respiratory tract infection 12 days ago admitted to emergency department with symptoms of dyspnea, difficulty of walking and sleeping tendency.

The findings of cranial computed tomography (CT) and diffusion magnetic resonance imaging (MRI) were found normal in the patient with paraparesia. With prediagnosed of Guillain-Barre syndrome, lomber puncture was performed but it was given up after protein level was found normal in cerebrospinal fluid. Patient was intubated after increase of sleeping tendency, occuring dysarthria and determining PCO_2: 56.6 mmHg, PaO_2: 78.7 mmHg, pH: 7.24 in arterial blood gas. Patient, to whom dopamine infusion (10 mcg/kg/hr) was started because of hypotension (BP: 81/54 mmHg) admitted to our ICU clinic. Laboratory findings at admittion were determined as: leucosyte:9.44 K/µL, Hb:11.2 g/dL, Hct:%36.7, AST: 47 Ü, ALT: 21 Ü, urine: 61 mg/dL, creatinine: 0.8 mg/dl. Intubated patient with APACHE (Acute Physiology and Chronic Health Evaluation) II score: 18 was started to be mechanically ventilated with SIMV mode. In his physical examination bilateral roncus was determined. In his chest x-ray in the right side of chest homogenous dansity, in the right bottom zone heterogenous dansity increase was determined. In his thorax CT in addition to pneumonic consolidations, in right pleural space 2 cm, in left pleural space 1 cm effusion and atelectacies were determined (Figure 1). Blood, tracheal aspirate and urine cultures were sent to laboratory. Antibiotherapy (tazobactam-piperaciline, clarithromycin and oseltamivir) was started with prediagnose of pneumosepsis. Paraparesia was determined in his low extremity neurologic examination. In his thoracal and lumbar MRI, in the posterior of T8-9 discitis and in the posterior of L4-5 vertebrae corpuses, spondilodiscitis along to epidural space and spinal canal was determined (Figures 2-3). After no regression was seen in pneumonic infiltration with the previous antibiotherapy and determining spondilodiscitis, new antibiotherapy (ceftriaxone 2x1, doxycycline 2x100 mg/day, rifampicin 1x160 mg/day) was started with prediagnose of Brucellosis. Meanwhile, Brucella species in his blood culture, Rose Bengal positive, Brucella Agglutination 1/2569 positive, Brucella Agglutination (2-ME): 1/80 positive; Brusella Agglutination (with Coombs):1/5120 positive were determined. After regression of respiratory system symptoms with new therapy against Brucellosis, patient was extubated at 7th day of ICU and oxygen mask therapy was started. Patient with stable hemodynamia and paraparesia was sent to the infection ward at 14th day of ICU. During his therapy in the infection clinic, after his coagulation blood tests were impaired [prothrombine time: 15.4 sn (10.8-15), INR: 1.34 (0.85-1.15), PT%: 60 (82-121) and APTT:36.6 sec (22.8-31)] his hepatitis markers were checked for chronic liver disease. AntiHCV: positive, HCV-RNA (PCR):1 922, 000 IU/mL were determined. His therapy was changed to trimethoprim 2x160 mg + sulfamethoxazole 800 mg/day, ciprofloxacin 2x500 mg/day ve rifampicin 1x600 mg/day. Patient was discharged from thehospital at 56th day and in his re-control after one month no difficulty of walking or a respiratory system symptoms were determined.

3. Dıscussıon

While brucellosis is a zoonotic disease all over the world, it is endemic in Turkey (1, 6-9). In our country, it is spread mostly by non-pasteurized, contaminated milk or

milk products. Considering that our case lives in village and has direct contact with animals, we think that inhalation or one of these contamination ways might be the case.

Brucellosis affects many organ systems and has different symptoms. It is rare but, pathologies in respiratory system like pneumonia, pleurisy and empyema due to *Brucella* spp. might be seen. (4-6, 9). Hatipoğlu et al. (9) reported %20,9 cough, %10,9 sputum, %9 dyspnea and %6,3 chest pain and in radiologic analysis lobar pneumonia, pleural effusion, paratracheal lymph adenoma and paranchimal nodules after investigation of 110 brucellosis patients. In these cases, when radiologic analysis and clinical symptoms were considered together, they found pulmonary brucellosis in 10 of them (%10). Because of being bilateral pleural effusion with pneumonic infiltration in the patient's thorax CT, his stay in ICU with the diagnosis of pneumonia approximately one year ago and decreasing symptoms with brucellosis specific antibiotics, we believe that the first pneumonia episode might have been community-acquired. At the second admission to ICU with pneumonia diagnosis, the amount of pleural effusion that was seen with thorax CT was not enough for being aspirated. But we believe that pneumonia was due to brucellosis after pneumonic infiltration, pleural effusion and respiratory system symptoms were decreased with antibiotherapy for brucellosis and brucella spp. was grown in blood culture.

The musculoskeletal signs of brucellosis include arthralgia, myalgia, back and waist pain, peripheric arthiritis, spondylitis, sacroileitis, osteomyelitis, burcitis and spondylodiscitis (2, 6, 7). Buzgan et al. (6) investigated 1028 brucellosis case and they found the ratio of osteoarticulary symptoms of disease according to the phases of acute, subacute, chronic or relaps between %21.8-34.7. Spondylodiscitis, which is one of the complications of brucellosis, is seen mostly in lumbar vertebrae but can be met in cervical and thoracal vertebrae less frequently (3, 7, 10). Brucellar spondylodiscitis, generally starts from upper endplate of vertebrae and might spread to all vertebrae. In this spread, virulence of bacteria, immunity of patient and the size of inoculum are important (10). In this group of patients, some symptoms like back and waist pain, difficulty of walk and myalgia are seen with systemic signs (6,7). The intensity of pain might increase or the pain might be acute and spread to the legs. MRI, which is used most common technique for diagnosis of spondylodicitis, can identify the pressure on the spinal cord and nerve rots and anatomic structures (10). Also in our case spondylodiscitis was diagnosed with lumbar and thoracal MRI and he had complaint of not walking for last one week.

In brucellosis, sometimes more than one system is affected. After Hatipoğlu et al. (9) had investigated 11 pulmonary brucellosis cases, they found a brucellosis complication sacroileitis in 2 cases (in one case lobar pneumonia and in another parenchymal nodular). In our case osteoarticulary system (spondylodiscitis) was also affected with respiratory system.

In %15-50 of cases with brucellosis, the disease can be diagnosed with bacteria seen in bone marrow or blood culture. If there is no bacteriologic diagnosis, antibody being more than 1/160, increasing amount of antibody four times in tube agglutination test or in ELISA (Enzyme-Linked Immunosorbent Assay) techniques become very valuable for serologic diagnosis of *Brucella*. In our case, both Brucella spp. was grown in blood culture and a supportive result had been seen with the agglutination test.

The progression of brucellosis is generally good. It is known the importance of early diagnosis and the successful results of early treatment. Altough the treatment is not standardised, the use of combination of rifampicin and doxycycline, tetracycline, aminoglycosides, cinolons and co-trimacsazole is advised by World Health Organization (11, 12). Duration of treatment depends on both radiologic and clinic recovery and complications (spondylodiscitis, neurobrucellosis, infective endocarditis etc.) (7, 12). In our case, the combination of doxycycline 200 mg/day and rifampicine 600 mg/day was administered, and the signs of pneumonia and difficulty of walk due to spondylodiscitis were reduced at the end of 1st week and 3rd month respectively.

According to our researches, our case is the first one that is mechanically ventilated due to pulmonary symptoms (acute respiratory failure) of brucellosis. As a result, we believe that, in cases being admitted with respiratory system symptoms like cough, sputum, dyspnea, osteoarticulary symptoms like back and waist pain arthiritis, arthralgia, myalgia, brucellosis as a differential diagnosis should be kept in mind especially in endemic countries.

The authors declare that they have no conflict of interest.

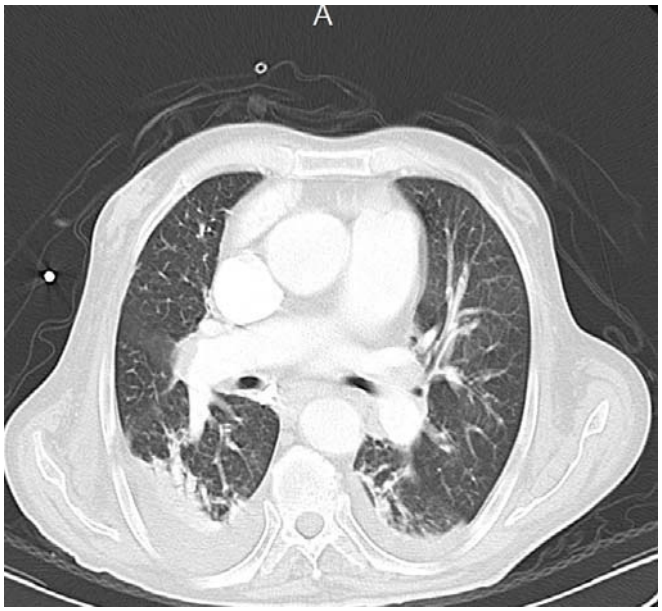

Figure 1: Pneumonic infiltration and bilateral effusion in thorax computed tomography

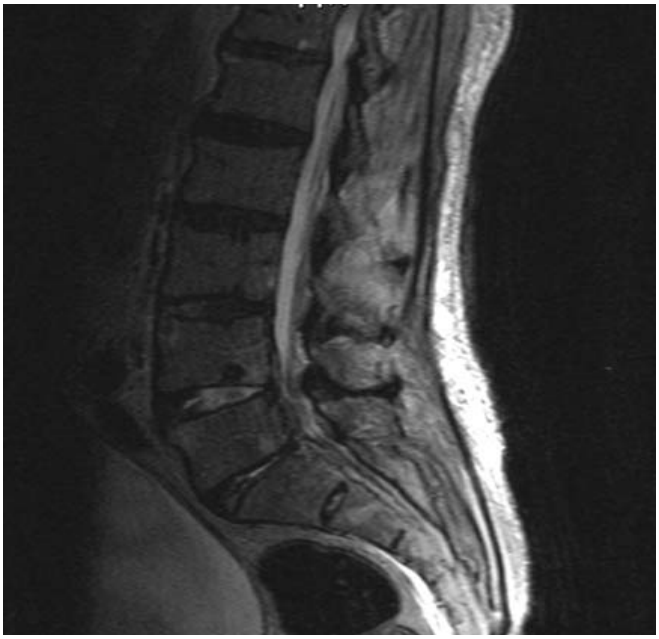

Figure 2: Vertebral lesions at T8-9 level

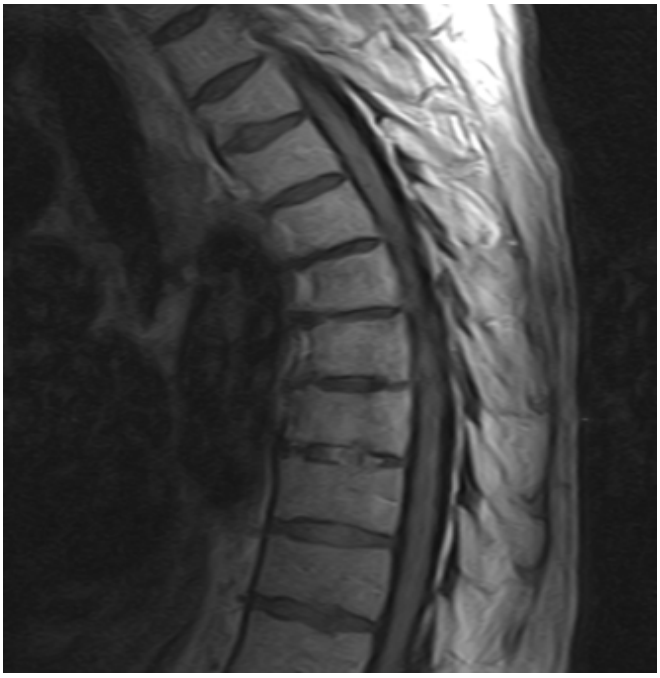

Figure 3: Vertebral lesions at L4-5 level

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