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A brucellosis case with ascites, hearing loss and pancytopenia

Asit, işitme kaybı ve pansitopeni ile seyreden bir bruselloz olgusu

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To date there has been no association of ascites, hearing loss and pancytopenia in brucellosis in the literature. A 25-year-old female patient was hospitalized with fever, hearing loss, ascites and pancytopenia. Cultures from bone marrow and ascites yielded growth of Brucella melitensis and Brucella standard tube agglutination was found to be positive at a titer of 1/1280. The patient completely recovered by the sixth week following combined antibacterial treatment of ciprofloxacin, rifampin and doxychline.

Key words: Brucellosis, ascites, hearing loss, pancytopenias

Brusella infeksiyonu asit, işitme kaybı ve pansitopeni birlikteliği literatürde henüz bildirilmemiştir. Yirmi beş yaşında kadın hasta ateş, asit, işitme kaybı ve pansitopeni nedeniyle kliniğe yatırıldı. Kemik iliği ve asit kültürlerinde Brusella melitensis saptanan hastanın, yapılan tüp aglütinasyon testi de 1/1280 titrede pozitif bulundu. Uygulanan kombine antibakteriyel tedavi (siprofloksasin, rifampin ve doksisiklin) ile hastanın yakınmaları altıncı haftada tamamen düzeldi.

Anahtar kelimeler: Bruselloz, asit, işitme kaybı, pansitopeni.

INTRODUCTION

Brucellosis is a multisystemic disease whose clinical spectrum may be quite different according to the involved area (1,2). The focal complications of brucellosis frequently cause trouble in the differential diagnosis. Gastrointestinal complications of brucellosis have randomly been reported and ascites is particularly rare (3). Hematological manifestations of brucellosis include various hematological abnormalities, ranging from minimal hemostatic changes to disseminated intravascular coagulopathy with a fulminant course (1). Neurobrucellosis is uncommon but serious and includes meningitis, meningoencephalitis, multiple cerebral or cerebellar abscesses, myelitis and peripheral neuropathy (2).

We report a rare case of brucellosis in a previously healthy 25-year-old woman who presented with fever, bilateral hearing loss, non-portal hypertensive type ascites and pancytopenia. Such a case has never been reported in the literature to our knowledge.

CASE REPORT

A 25-year-old female patient was admitted to our clinic with a history of fever (in the previous two months) hearing loss, abdominal pain, malaise and weight loss. She had experienced pyrexia up to 40°C, especially at nights, followed by excessive sweating. Hearing loss had started two months previously with progressively increasing tinnitus. Abdominal pain and swelling, dyspnea and weight loss had accompanied the clinical picture.

On physical examination, blood pressure was 100/60 mmHg, pulse rate 120 per minute, temperature 40°C, and respiratory rate 24 per minute. The patient was unable to hear the examining doctor and she was cachectic and pale in appearance. Systolic murmur of 2/6 in strength was heard on all heart foci. Abdominal examination revealed a soft liver with smooth surface palpable four cm at the midclavicular line from the costal edge and splenomegaly palpable six cm at the midclavicular line from the costal edge. Ascites was found to be present at the umbilical

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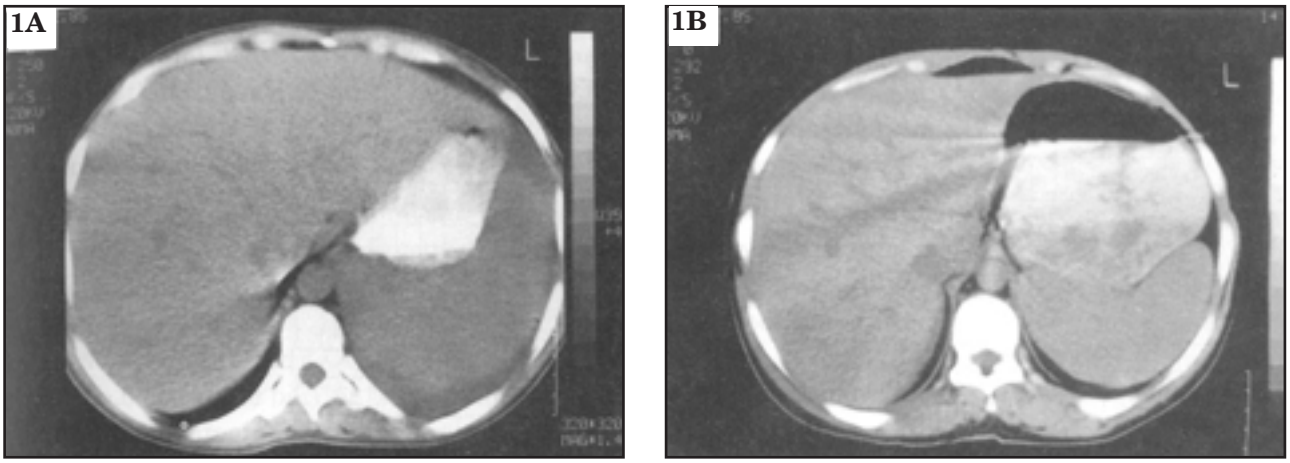

Figure 1A, 1B. Computerized Tomography findings on admission and at the sixth week of treatment; hepatosplenomegaly, tense ascites and pleural effusion which were found on the first day of admission. Completely improved by the sixth week of treatment.

level on percussion. In ear-nose-throat examination, both eardrums were normal. Weber test was lateralized to the left at 500 Hz and Rinne test was positive in both ears at 500 Hz.

Blood cell count and biochemistry findings on admission are shown in Table 1 and Table 2. Chest radiogram showed pleural effusion in the left costo-diaphragmatic sinus, while hepatosplenomegaly (liver 19 cm, spleen 20 cm) and widespread ascites was established in abdominal ultrasonography. The same findings were confirmed on abdominal tomographic examination (Figure 1A). Blood smear examination revealed decreased leucocytes and platelets, anisopoikylocytosis in erythrocytes and mild hypocromia. Bone marrow was normocellular. There was moderately mixed type hearing loss in both ears in audiometry (Figure 2A). The examination of ascites yielded cell numbers of 200 cells/mm^3 (lymphocyte 71%), serum-ascites albumin gradient was 0.9 g/dl, glucose 125 mg/dl, total protein 3.3 g/dl and albumin 1.8 g/dl. Levels of CA 125 and adenosine deaminase in ascites were found as 291 U/L (normal <16.3) and 64 U/L (normal <40) respectively. Albumin/globulin rate was 0.48 in protein electrophoresis. Brucella tube agglutination test was positive at a titer of 1/1280. Brucella melitensis was isolated from ascites and blood and bone marrow cultures. Lumbar puncture yielded normal cerebrospinal fluid findings.

The patient was diagnosed as brucellosis with involvement of 8th nerve, gastrointestinal system and bone morrow. She was administered doxycycline 200 mg/day, rifampin 600 mg/day, and

Table 1. Pre-treatment and post-treatment hematological values

Hemogram	*Admission day*	*Day 10*	*Week 6*
White cells (mm^3)	1800	2300	6500
PNL (%)	71	-	64
Hct (%)	22.7	32.2	42.6
MCV (fL)	76.9	77.2	82.7
Platelet cells (mm^3)	42.000	116.000	197.000
PT* (sec)	22.9	16.7	12.3
Sedim (mm/h)	46	-	8

*Prothrombin time: Normal value 12-16 sec

Table 2. Pre-treatment and post-treatment biochemical values

	Admission day	*Day 10*	*Week 6*
ALP	566	521	235
GGT	79	80	42
AST	184	168	38
ALT	59	48	26
LDH	1789	1026	386
T.Protein	6		7.6
Albumin	2.7		4.5

ALP=alkaline phosphatase (normal values; 0-270 U/L), GGT= g-glutamyl-transpeptidase (normal values; 0-49 U/L), AST=aspartate aminotransferase (normal values ; 0-40 U/L), ALT= alanine aminotransferase (normal values ; 0-40 U/L), LDH= lactate dehydrogenase (normal values; 240-480 U/L), T.Protein (normal values; 6.6-8.7 g/dl), Albumin (normal values; 3-5.5 g/dl)

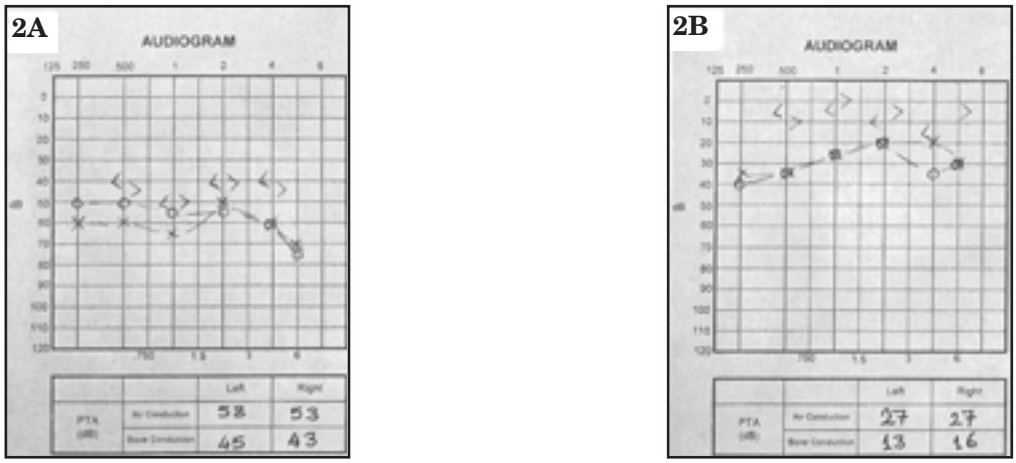

Figure 2A, 2B. Audiometry findings before treatment and at the third week of treatment.

ciprofloxacin 1000 mg/day according to culture and susceptibility testing results. Body temperature returned to normal on the fourth day of treatment. The clinical picture rapidly improved, the hemogram returned to normal limits and ascites completely disappeared by the third week of treatment. By the sixth week of treatment, she had no complaints, her hepatosplenomegaly had decreased in abdominal CT examination (Figure 1B) and sensorineural hearing loss was found to have to improved in audiometry (Figure 2B). It was therefore concluded that the standard six week therapy was sufficient and that there was no need to continue to treatment. The patient was discharged and followed up for six months at regular one month intervals but did not experience any relapse.

DISCUSSION

Brucellosis is a systemic disease with protean manifestations. Its features may mimic those of other febrile illnesses. The most common symptoms are fever, malaise, weakness, headaches, myalgia, sweats, chills, anorexia, sore throat and weight loss, often without physical findings. Physical examination often reveals no abnormalities, and patients can look deceptively well. Some patients, in contrast, are acutely ill, with pallor, lymphadenopathy, hepatosplenomegaly, arthritis, meningitis or pneumonia. Hepatosplenomegaly is reported in 20% to 30% of cases (2).

Anemia, leukopenia, thrombocytopenia and pancytopenia are among common hematological findings (4). The frequency of pancytopenia ranges from 3% to 20 % (1). In bone marrow examination, 20% of cases are found to be hypercellular and 28% normocellular (5). Possible mechanisms involved in pancytopenia include hypersplenism, reactive hemophagocytosis, bone marrow suppression due to sepsis and presence of granulomas in the bone marrow. Hematologic abnormalities usually resolve promptly with treatment of the disease (1). Our patient had initially apparent hepatosplenomegaly and pancytopenia, but these regressed by the third week of treatment.

Hearing loss is among the rare complications seen in acute or chronic brucellosis, generally occurring with neurobrucellosis, mostly of sensorineural type (6). Treatment should be initiated as soon as possible to prevent permanent hearing loss and later relapses and long-term combination therapy is required in such cases (7). Mc Lean et al (8) reported that four of 18 neurobrucellosis cases treated suffered from permanent hearing loss. Our patient had been suffering from hearing loss for two months and audiometry performed before treatment showed mixed type extensive hearing loss but this appeared to recover at the third week of treatment (figure 2B).

Ascites has been rarely observed in brucellosis cases. It develops either at chronic liver disease stage or in the course of acute infection as a response of the peritoneal mononuclear phagocytic system in brucellosis. Differential cell counts of ascitic fluid usually reflect a predominance of lymphocytes and ascitic fluid has a good response to

the combined antibacterial therapy (3). In our case, follow-up CT at the sixth week of treatment revealed that pleural effusion and ascites had completely disappeared and hepatosplenomegaly appeared to have decreased (Figure 1B).

Doxycycline, rifampin, streptomycin, aminoglycosides and quinolones are therapeutic agents used in the treatment of brucellosis. Neurobrucellosis treatment necessitates special attention. Most authorities recommend two or three drugs which cross the blood-brain barrier (such as doxycycline, rifampin and trimethoprim-sulfamethoxazole) (8). The optimal duration of treatment is as yet unclear. Bucher et al (9) found relapses and severe neurologic defects in their patient in spite of intensive, prolonged treatment with a combination of trimethoprim-sulfamethoxazole, rifampin and doxycycline.

In conclusion, brucellosis is a multisystemic disease which may be manifested by various symptoms. Our case is the first case of brucellosis to be reported in the literature with the rare association of severe complications of hearing loss, ascites and pancytopenia. The patient recovered, with resolution of these complications, following six weeks of triple antibacterial theraphy.

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