

# A rare case of acute sternoclavicular joint brucellosis

Shayan Shahabinejad<sup>1</sup>, Mandana Reza Zadeh<sup>2</sup>, Mostafa Shahabinejad<sup>3\*</sup>, Naser Shahabinejad<sup>4</sup>

<sup>1</sup>Medical Science Researcher, Kerman, Iran

<sup>2</sup>Internist and Professor of Rheumatology, Kerman, Iran

<sup>3</sup>M.Sc of Health Services Management, Health Services Management Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

<sup>4</sup>Infectious Disease Specialist, Kerman, Iran

**Received:** 12 January 2015

**Accepted:** 18 May 2015

**Published online:** 20 May 2015

**\*Corresponding author:** Mostafa Shahabinejad,  
Email:  
mostafa.sh.n2212@gmail.com

**Competing interests:** The authors declare that no competing interests exist.

**Citation:** Shahabinejad S, Reza Zadeh M, Shahabinejad M, Shahabinejad N. A rare case of acute sternoclavicular joint brucellosis. Report of Health Care 2015; 1(4): 142-143.

## Abstract

Brucellosis is an important zoonotic disease that imposes considerable economic losses. This systemic disease can involve different parts of the body including the musculoskeletal system, genital organs, gastrointestinal system, circulation system, nervous system, skin, respiratory, heart, liver and spleen. A 31-year-old man was referred to a hospital with complaint of pain in the left shoulder. He had fever for 2 days and was hospitalized in October 2015. Based on the primary examination, there was fever in addition to swelling, redness, tenderness and warmth in the left sternoclavicular joint. After doing Brucella tests for two times in two different laboratories, the diagnosis of brucellosis was confirmed and the patient received pharmacological treatment. *Brucella* infects people as an accidental host. *Melitensis* and *abortus brucella* are the most common types that cause the brucella disease in humans. Infection usually appears in the form of fever with chills, sweating, arthralgia and myalgia. This disease is neglected and undiagnosed in some cases especially at the time of occurrence of unusual symptoms. Therefore, according to increasing incidence of brucellosis, doctors should consider this disease in the case of similar clinical symptoms. Also, diagnostic tests should be taken into account when needed.

**Keywords:** Brucellosis, Arthritis, Sternoclavicular joint

## Introduction

Brucellosis is an important zoonotic disease which is still a serious public health problem in some parts of the world and imposes significant economic losses. In animals, the disease causes abortion, inflammation of the placenta, infertility, preterm labor, and reduced milk secretion. In humans, it causes arthralgia, arthritis, endocarditis, meningitis, raging fever, etc. (1). Brucellosis is a common infectious disease in developing countries (2). The disease usually takes place through contact with infected animals, contaminated milk or dairy products, direct contact with aborted fetuses infected with the organism, and rarely, eating the meat of animals infected with the bacteria (3). Although brucellosis can infect humans as an accidental host, but the annual incidence of the disease is over 500000 cases. This disease is mostly seen in Asia, the Middle East, Latin America, and Africa (4,5). In endemic areas, the incidence of brucellosis is 1-200:100000 person (6). This is a systemic disease which can involve different parts of the body including the musculoskeletal system, genital organs, digestive system, circulatory system, nervous system, skin, respiratory system, heart, liver and spleen (7-9). *Brucella melitensis* (related to sheep) and *Brucella abortus* (related to cows) are the most common species that cause brucellosis disease in humans, usually along with fever with chills, sweating, joint pain and muscle pain. The musculoskeletal

system is the most common system that is involved in this disease (9). The results show that the prevalence of brucellosis has been on a rise in recent years (10). It is estimated that the incidence of brucellosis is 25 times higher than reported which is due to the lack of recognition or non-reported cases of the disease (11). Iran also has become an important area in terms of brucellosis cases that could be a result of the fact that no proper control and eradication program has been implemented in the country in recent years (12). This study reports a rare case of acute *Brucella* arthritis in the sternoclavicular joint.

## Case Report

A 31-year-old young man was referred to a hospital with complaint of pain in the left shoulder. He also had fever for a period of 2 days. Primary examination showed that the patient had fever, swelling, redness, tenderness and warmth in the left sternoclavicular joint. The patient stayed for further examination in a hospital in Kerman. In the performed magnetic resonance imaging (MRI) of the joint, no collection was reported. At first, differential diagnosis of infectious process of inflammatory process not possible. Lab findings were as follows: white blood cell (WBC) = 8000, erythrocyte sedimentation rate (ESR) = 20, C-reactive protein (CRP) = 1+. To complete the diagnosis, *Brucella* tests were requested for the patient. The results



were as follows: Wright=1/160, Coombs Wright=1/160, 2ME=1/80.

To confirm Brucella, brucellosis tests were sent out once again to another laboratory. The results were as follows: Wright Agglutination test= Positive (1/640), Coombs Wright= Positive (1/640), Brucella = Positive (22.5) (ELISA IgG = Negative < 12.5).

After confirming brucellosis, the initial treatment was changed to anti-Brucella treatment. Patient's fever subsided gradually. The initial response of the patient to the treatment was appropriate and after a few days, the patient was discharged and treatment was continued as an outpatient procedure.

## Discussion

The incidence of acute arthritis, in the sternoclavicular joint in the reported case, is one of the rare cases that has not been reported and recorded anywhere according to the published articles and information. Arthritis exists in 10%-25% of patients with brucellosis and the most common joints are knee (25%), hip (18%), spine (8%) and sacroiliac (26%) (8). The most common joint complications in brucellosis are large joints arthritis, spondylitis, bursitis, tenosynovitis and osteomyelitis (13). Brucellosis is diagnosed based on the following items: (a) Brucella isolation in blood culture, (b) Presence of an applicable clinical image of the patient such as joints pain and inflammation, fever, sweating, chills, headache, weakness, etc. and Wright titer  $\geq 1.160$  in more than two samples, and (c) Positive Coombs Wright titer  $\geq 1.320$ , each of the criteria is intended for early diagnosis of brucellosis (7,14). In the mentioned patient, two-stage consecutive Brucella tests were positive in two different laboratories. Unfortunately, there is no effective and proper vaccine to deal with brucellosis. Prevention of infection in animals is through vaccination, and using pasteurized milk and milk products is the only useful approach to control the incidence of brucellosis in humans (15). This disease is often neglected and undiagnosed in humans, sometimes with the wrong diagnosis of the disease the patient is not properly treated or treated by other titles like "fever with unknown origin" (16). Therefore, according to the increased incidence of brucellosis due to consumption of milk and unpasteurized dairy products, if similar clinical symptoms are observed, doctors should ask for microbiological tests. Since the greatest risk factors for brucellosis are raw and unpasteurized milk and dairy products (16), health education package distribution with an emphasis on boiling milk and consumption of pasteurized processed milk products appears to be necessary.

## Conclusion

Due to overlapping symptoms of the disease by other diseases, if similar clinical symptoms are observed, doctors should also consider this disease.

## Ethical issues

A informed consent was obtained to publish this report.

## Authors' contributions

Study conception and design by Shayan Shahabinejad; acquisition of data, interpretation of data and drafting of manuscript by Mostafa Shahabinejad; critical revision final approval of the version to publish by Dr Mandana Reza Zadeh and Dr Naser Shahabinejad.

## Acknowledgements

Researchers appreciate all colleagues who helped in conducting this study.

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