



## **E. COLI SEPTIC ARTHRITIS AND DISTAL CLAVICLE LYSIS AFTER SUBACROMIAL INJECTION: A CASE REPORT**

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Article Info	ABSTRACT
<p>Received 22/06/2015 Revised 29/06/2015 Accepted 16/07/2015</p>	<p><i>E. Coli</i> septic arthritis is seen very rarely and generally accompanies a systemic disease. An even more rare event is <i>E. Coli</i> septic arthritis of the shoulder region. In this case report of <i>E.coli</i> mono-arthritis which developed following an injection, the prevalence of this event, the potential predisposing factors and treatment are reported. The patient presented at an external centre with complaints of right shoulder pain and was diagnosed with subacromial impingement syndrome. Steroid and local anesthetic was administered to the subacromial region at the level of the shoulder posterior portal. On the 3rd day after the injection, the patient presented at our clinic with pain in the shoulder anterior and superior region. In the physical examination, movement was restricted. The patient was admitted for close observation and tests. On the first day of hospitalization, progressive shoulder pain and movement restriction developed with swelling, redness and increased temperature in the superior shoulder and clouded consciousness. Laboratory tests, direct radiograph examination and magnetic resonance imaging (MRI) were applied. As purulent fluid emerged on aspiration, surgical irrigation and debridement were applied. From the culture of the material taken peri operatively, <i>E. Coli</i> proliferation was determined and a diagnosis was made of <i>E.coli septic arthritis</i>. As a result of the antibiogram, treatment was continued with antibiotherapy. In the 3-year postoperative follow-up, <i>distal clavicular lysis</i> developed and the shoulder movement was seen to have improved.</p>
<p><b>Key words:</b> Acromioclavicular (AC), Septic arthritis, <i>E.coli</i>, Distal clavicular lysis.</p>	

### INTRODUCTION

The most common cause of infectious arthritis is staphylococcus aureus, neisseria gonorrhoea and although more rarely, various micro bacteria and fungi. As acute septic arthritis causes destruction of the joint cartilage, it is necessary not to delay appropriate antibiotic treatment following early diagnosis and drainage [1-2].

In this paper, septic arthritis was determined in the subacromial area and in the AC joint associated with the rarely seen agent, *E.coli*, in a patient who had been administered with a subacromial shoulder injection. Following surgical debridement, in the 3-year follow-up, after the spontaneous development of distal clavicular lysis, the pain in shoulder movements was reduced.

### CASE STUDY

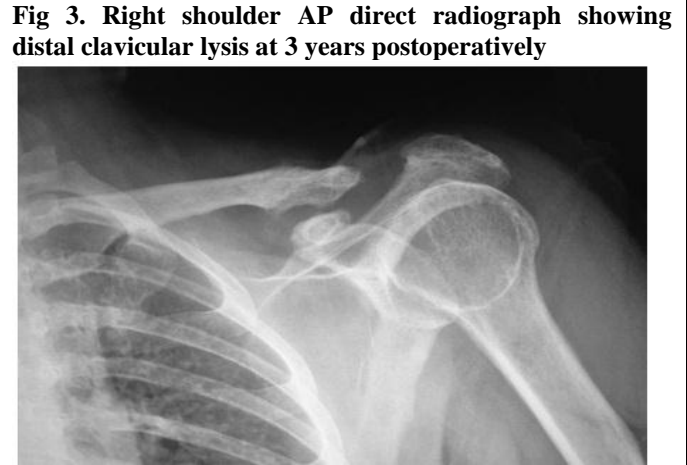
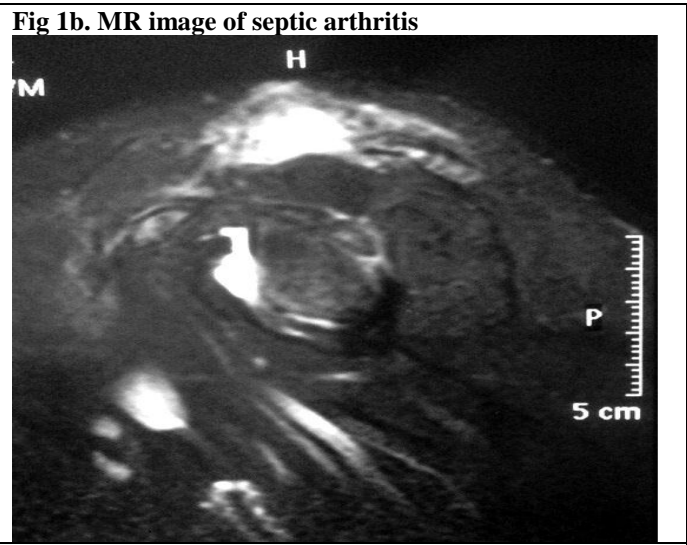
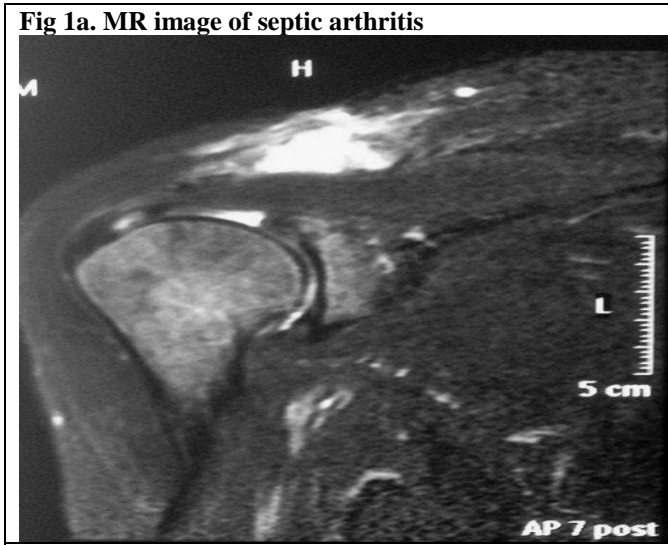
A 53-year old female patient presented at our clinic with pain in the anterior and superior shoulder on the 3rd day after a subacromial injection to the right shoulder administered at an external centre. Shoulder movements in all directions were restricted. The patient was admitted for monitoring and tests. In the physical examination, the general status of the patient was moderate-poor with clouded consciousness. The body temperature of the patient was 39°C and pulse was measured at 130/min. In the follow-up, the pain and movement limitation worsened. There was an increase in swelling, redness and temperature in the superior of the right shoulder. The patient had a



history of diabetes mellitus diagnosis. The laboratory test results were white cell count 24000/mm<sup>3</sup>, erythrocyte sedimentation rate 80mm/hr, C-reactive protein (CRP) 289 mg/L (normal 0-5mg/L).

Examination of the shoulder was made with AP direct radiograph and MRI. On the MRI, a 3cm fluid loculation was determined in the inferior right acromion extending to the AC joint. It was evaluated as an abscess (Figure 1a, Figure 1b) and aspiration was applied. As purulent fluid emerged in the aspiration, surgical irrigation and debridement was applied to the patient. In the culture

of the material taken peri operatively, E.coli proliferation was determined so a diagnosis of *E. Coli septic arthritis* was made. Direct AP radiograph examination was made of the right shoulder postoperatively (Figure 2). As a result of the antibiogram, parenteral oral antibiotics sensitive to the appropriate micro-organism were administered for 3 weeks followed by oral antibiotherapy. At the postoperative 3-year follow-up examination, *distal clavicular lysis* was seen to have developed (Figure 3) and the shoulder movements had improved.



**DISCUSSION AND CONCLUSION**

Although septic arthritis is rarely seen in the shoulder joint and surrounding area, it constitutes 10-15% of all joint infections [3]. While the majority of infection reaches the glenohumeral joint by the hematogenous route it may be in the AC joint due to immune insufficiency and/or following injection [4-5]. In the current patient, apart from diabetes mellitus, there was no other systemic disease.

Complications following corticosteroid injections in the shoulder joint are extremely rare (1-15%). Pain is the

most commonly seen complication during and after injection. This pain may last for 24-48 hours [6].

Infection occurring after 48 hours following an injection is a worrying event. Several experimental animal studies have reported that hyaline cartilage damage is formed by infection following an injection [7]. In the current case, infection did not develop in the glenohumeral joint, which can be considered to be due to early diagnosis and treatment. Following injection, patients should be kept under observation, the patient must be fully informed, early



diagnosis is important and must not be neglected. In a study by Gray et al, it was reported that steroid injection rendered the joint more sensitive to trauma such as infection by causing irreversible damage to the hyalin cartilage and laid the foundations of septic arthritis by impairing the synovial cell lysosomal functions [8].

Septic arthritis in the shoulder area due to *E. Coli* has been rarely reported in literature and injection-related *E.coli* septic arthritis in particular has not been reported. Septic arthritis which develops associated with *E.coli* has intra-abdominal origins and the majority of cases involve the hip joint. In the shoulder joint, however, it may develop as a result of an underlying systemic disease which reduces immunity, such as diabetes [9].

In a study by Chiang et al, following surgical debridement in septic arthritis seen in the AC joint, distal

clavicular resection was applied [2].

Rhee *et al* reported that an open surgical approach was a more appropriate choice than arthroscopy in the treatment of septic arthritis developing in the shoulder associated with injection (10). In the current case, arthroscopic irrigation and debridement was applied.

As in all joint injections, great care must be shown to sterility in injections around the shoulder. Especially in patients with a systemic disease, follow-up after the injection is important and must be applied. The patient must be fully informed in respect of infection. Therefore, in patients with symptoms such as pain, redness and raised temperature exceeding 48 hours after injection, laboratory tests and imaging methods such as MR should be applied. When necessary, aspiration should be applied and planning should be made according to the result.

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