

Original Article

Septic arthritis and arthropathy of the rotator cuff: remember this association[☆]



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ABSTRACT

Objective: To describe occurrences of septic glenohumeral arthritis among patients with arthropathy of the rotator cuff, and to highlight the importance of correct diagnosis and surgical procedures.

Methodology: Eight surgical drains were installed in seven patients with glenohumeral pyoarthritis. All the patients presented arthropathy of the rotator cuff (four males and three females). Six patients presented pyoarthritis in the dominant shoulder. The age range was from 53 to 93 years (mean: 74 years). The mean duration of the symptoms before the surgical lavage was six weeks. Six patients underwent treatment consisting of a combination of arthroscopic irrigation and debridement, and one patient was treated by means of open arthrotomy. All the patients received systemic antibiotic therapy in accordance with their bacterial sensitivity.

Results: All seven patients achieved satisfactory results, taking into consideration especially the improvement of pain and the patients' satisfaction. The functional assessment was performed using the University of California Los Angeles (UCLA) scale. Only one patient needed to go through another arthroscopic procedure. *Staphylococcus aureus* was isolated from four cultures and *Escherichia coli* from one culture. There were two situations in which the patients used empirical antibiotic therapy and the cultures showed negative results. Among the associated procedures, tenotomy of the biceps was performed in four cases, resection of the lateral third of the clavicle due to osteomyelitis in one case and arthrotomy of the knee in one case.

Conclusion: Surgical treatment was effective in the cases of arthritis associated with arthropathy of the rotator cuff. In patients with arthropathy of the rotator cuff and subclinically altered laboratory signs, the possibility of pyoarthritis should always be suspected.

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Artrite séptica e artropatia do manguito rotador: lembrar-se dessa associação

RESUMO

Palavras-chave:

Artropatias
Manguito rotador
Artrite infeciosa
Artroscopia

Objetivo: Descrever a ocorrência de artrite séptica glenoumral em pacientes com artropatia do manguito rotador, bem como destacar a importância do correto diagnóstico e procedimento cirúrgico.

Metodologia: Foram feitas oito drenagens cirúrgicas em sete pacientes com pioartriteglenoumral. Todos os pacientes apresentavam artropatia do manguito rotador (quatro do sexo masculino e três do feminino). Seis pacientes apresentavam pioartrite no ombro dominante, a idade variou de 53 a 93 anos (média de 74 anos). A duração media dos sintomas antes da lavagem cirúrgica foi de seis semanas. Seis pacientes foram submetidos ao tratamento com a combinação de irrigação artroscópica e desbridamento, um paciente foi tratado por artrotomia aberta. Todos os pacientes receberam antibioticoterapia sistêmica de acordo com a sensibilidade bacteriana.

Resultados: Os sete pacientes obtiveram resultados satisfatórios, se levarmos em consideração principalmente a melhoria da dor e a satisfação dos pacientes. A avaliação funcional foi feita por meio da escala da Universidade da Califórnia em Los Angeles (UCLA). Apenas um paciente precisou passar por um novo procedimento artroscópico, em quatro culturas foi isolado o *Staphylococcus aureus*, em uma cultura a *Escherichia coli* e em duas situações, nas quais os pacientes usavam antibioticoterapia empírica, essas culturas tiveram resultado negativo. Entre os procedimentos associados fez-se quatro tenotomias do bíceps, uma ressecção do 1/3 lateral da clavícula devido à osteomielite e uma artrotomia do joelho.

Conclusão: O tratamento cirúrgico foi eficaz nos casos de artrite associada a artropatia do manguito rotador. Sempre suspeitar, em pacientes com artropatia do manguito rotador com sinais subclínicos e laboratoriais alterados, da possibilidade de uma pioartrite.

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Introduction

Degenerative arthropathy of the rotator cuff is the collapse of the glenohumeral joint secondary to chronic massive rotator cuff injury. It causes elevation of the humeral head, joint destruction, synovial fluid changes, subchondral cysts, flattening of the greater tubercle, osteophytes, acetabularization of the coracoacromial arch, and osteopenia^{1,2} (Fig. 1). It manifests as pain, crepitus, and decreased range of motion.³

Pyogenic arthritis of the shoulder is characterized by an inflammatory process of infectious origin affecting the glenohumeral joint. Hematogenic route is the most common cause. However, other causes include contiguity, previous surgery, or intra-articular injection.^{4,5}

Septic arthritis of the glenohumeral joint is relatively rare, representing 10–15% of all joint infections, and can lead to severe residual limitation with potentially fatal implications.⁶ The most commonly found pathogen is *Staphylococcus aureus*, and their enzymes may destroy the auricular cartilage within 24–48 h.⁷

To the best of the authors' knowledge, there are no studies that correlate both conditions. This study aimed to describe the occurrence of septic glenohumeral arthritis in patients with rotator cuff arthropathy, as well as to highlight the

importance of correct diagnosis of infection and early adequate treatment to prevent irreversible changes to both the bone and surrounding soft tissues.

Methodology

Between May 2009 and March 2014, seven patients with rotator cuff arthropathy developed septic arthritis of the glenohumeral joint and underwent surgical treatment by surgical drainage and systemic antibiotic therapy to the infecting germ. Eight surgical procedures were performed: four patients were male and three were female, whose age ranged from 53 to 93 years (mean 74 years). Associated comorbidities were investigated, and patients were evaluated using the UCLA functional scale three months after the procedure. Six patients were subjected to arthroscopic procedure by combining arthroscopic irrigation and debridement and one was treated with open arthrotomy. The mean interval from symptom onset to surgical debridement was six weeks (range: 15–70 days).

Laboratory tests, X-rays, and magnetic resonance imaging were used as diagnostic methods, as well as intraoperative joint puncture (Fig. 2). Pyogenic arthritis of the shoulder was confirmed by histologic analysis and culture of the material collected during surgery.

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