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Original Article

Rotator cuff injury in patients over the age of 65 years: evaluation of function, integrity and strength☆

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ARTICLE INFO

Article history:
Received 8 July 2013
Accepted 29 May 2014
Available online 16 June 2015

Keywords:
Shoulder joint/surgery
Rotator cuff
Arthroscopy

ABSTRACT

Objective: To retrospectively evaluate the results from patients who underwent arthroscopic treatment for rotator cuff injuries, among those aged over 65 years, observing integrity, function and strength.
Methods: Thirty-five shoulders were operated between July 2005 and July 2010, and 28 shoulders were re-evaluated regarding elevation strength and external rotation, using a digital dynamometer. Integrity was evaluated by means of ultrasound examinations. The patients, whose mean age was 70.54 years (ranging from 65 to 82 years), were followed up for a minimum of 26 months and mean of 51.18 months (ranging from 26 to 82 months). To evaluate function, the UCLA score, the Simple Shoulder Test (SST) and a visual analog scale (VAS) for pain were used.
Results: In analyzing the ultrasound scans, it was observed that the integrity of the rotator cuff was maintained in 75% of the cases at the end of the follow-up, along with the improvement in the UCLA score, which evolved from 17.46 to 32.39, i.e. excellent and good results in 89.28%. The mean SST and VAS indices were 9.86 and 1.5 respectively.
Conclusion: Arthroscopic surgery to repair rotator cuff injuries in patients over the age of 65 years leads to improved function and pain relief, with maintenance of the integrity of the repair. The data on muscle strength were inconclusive.

Lesão do manguito rotador em pacientes maiores de 65 anos: avaliação da função, integridade e força

Palavras-chave:
Articulação do ombro/cirurgia

RESUMO

Objetivo: Avaliar retrospectivamente os resultados dos pacientes submetidos ao tratamento artroscópico das lesões do manguito rotador em pacientes acima de 65 anos e observar a integridade, a função e a força.

☆ Work developed at Hospital Governador Israel Pinheiro and at Hospital Mater Dei, in Belo Horizonte, MG, Brazil.

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http://dx.doi.org/10.1016/j.rboe.2015.06.004

Bainha rotadora
Artroscopia

Métodos: Foram operados 35 ombros entre julho de 2005 e julho de 2010 e 28 ombros reavaliados quanto à força de elevação e de rotação externa com um dinamômetro digital. A integridade foi avaliada por exame de ultrassonografia. Os pacientes, com média de 70,54 anos (variação de 65 a 82), foram seguidos por no mínimo 26 meses (variação de 26 a 82), com seguimento médio de 51,18 meses. Para a avaliação da função foi usado o escore da UCLA, o Simple Shoulder Test e a escala analógica visual da dor.

Resultados: Na análise da ultrassonografia observou-se a manutenção da integridade do manguito rotador em 75% dos casos no fim do seguimento, bem como a melhoria da pontuação no escore UCLA, que passou de 17,46 para 32,39; ou seja, 89,28% de excelentes e bons resultados. A média dos índices SST e EAV foi 9,86 e 1,5 respectivamente.

Conclusão: A cirurgia artroscópica para reparo da lesão do manguito rotador em pacientes maiores de 65 anos leva a uma melhoria da função e um alívio da dor, com manutenção da integridade do reparo. As informações sobre força muscular foram inconclusivas.

Introduction

The incidence of rotator cuff injuries in the general population is between 5% and 33%, while among individuals over the age of 65 years it is approximately 25%.[1] It tends to increase with aging and reaches 50% of individuals over the age of 80 years.[1,2]

At the beginning of the 1990s, there was a trend toward more conservative approaches toward rotator cuff lesions among the elderly. However, great technological advances have made it possible for surgeons to achieve better functional results in this age group.[2,3]

The advantages of arthroscopic repair are its low surgical impact, the possibility of maintaining the integrity of the deltoid and a less painful postoperative period.[4] The factors contraindicating surgical repair among the elderly include the generally larger injuries in this age group, with worse tissue quality and slower healing response than in individuals aged 50–70 years.[2] Moreover, elderly people have a tendency to present greater numbers of comorbidities (diabetes mellitus, rheumatoid arthritis and renal diseases), which may interfere with surgical recovery.[2,5]

A large variety of studies have analyzed the short-, medium- and long-term functional results from rotator cuff surgery.[6–8] Here, we evaluated the more advanced age group through questionnaires on functional capacity, ultrasound examinations and muscle strength measurements, with the aim of analyzing the results following arthroscopic repair of the rotator cuff in patients over the age of 65 years, in relation to function, strength and integrity.

Material and methods

Between June 2005 and July 2010, 35 consecutively selected shoulders in individuals of the specified age, with a clinical diagnosis of rotator cuff injury that had been confirmed by means of magnetic resonance imaging, were treated surgically. The surgical procedures were performed under arthroscopic viewing by the same surgeon.

The inclusion criteria were that the patients should be over the age of 65 years at the time of the surgery; the procedure was performed under arthroscopic viewing and the minimum postoperative follow-up period was 24 months. The following were exclusion criteria in this study: lesions larger than 5 cm with retraction as far as the glenoid, associated lesions (SLAP, Bankart, etc.), previous surgery on the same shoulder, presence of glenohumeral arthrosis, follow-up of less than 24 months, refusal to participate in the study and failure to adhere to the protocol that had been established or incorrect following of this protocol.

Among the 28 patients who were operated, 8 had injuries that were considered small, 12 had medium-sized injuries and 8 had large injuries.

The patients were evaluated by two independent examiners who did not take part in the procedures, using the University of California at Los Angeles (UCLA) score before the operation and then, after the operation, reassessment using the UCLA score along with the Simple Shoulder Test (SST) and a visual analog scale (VAS).[9,10] The integrity of the tendons was investigated by means of ultrasound examinations performed by the same examiner, using a Toshiba device with a 7.5 MHz linear transducer.[3,11] Elevation strength and external rotation were also measured by a single examiner using a dynamometer (IDO Isometer Shoulder Muscle Strength Gauge, United Kingdom). After discarding the lowest of the three measurements, the average of the higher two measurements was used (Figs. 1 and 2). The results were analyzed statistically using Levene's test for equality of variance and the *t*-test for equality of means.

The patients were positioned in lateral decubitus and were operated under general anesthesia and brachial plexus block. Anterior, lateral and posterior portals were used and a complete inventory of the glenohumeral joint was routinely made.

Following this, bursectomy was performed to identify the size of the lesion and the tendons involved. In all the cases, economical debridement of the edges of the lesion was performed and the zone for reinsertion of the rotator cuff in a juxta-articular position was prepared. The tendons were reinserted using 5 mm titanium anchors in a single row, with nonabsorbable threads that maintained separations of 1 cm