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Long biceps tenotomy associated with capsular release for the treatment of shoulder stiffness

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Background

Shoulder stiffness is a common condition following trauma, rotator cuff tears and surgery. Conservative and surgical treatment are commonly used to treat this pathology, including steroid injection, physiotherapy and capsular release. Inflammation of long head of the biceps tendon (LHB) may be associated with persistent pain and rigidity of the shoulder, and tenotomy may be determinant in the resolution of the symptomatology.



Methods

A total of 61 patients randomly underwent capsular release alone (31 subjects, group A) or capsular release associated with LHB tenotomy (30 subjects, group B), after failure of conservative therapy including physiotherapy and intra-articular injections. Range of movement (ROM), VAS for pain and University of California Los Angeles (UCLA) score were assessed pre-operatively, and at 2 weeks, 3 weeks, 1, 3 and 6 months, 1 and 2 years. Post-operative rehabilitation protocol included progressive improvement of passive and active motion and started immediately after surgery (second post-operative day).



Results/1

Among the 61 patients included, shoulder stiffness was addressed to trauma (18 subjects), degenerative rotator cuff tears (23 subjects), and previous shoulder surgery (8 subjects). It was not possible to assess an exact cause in the remaining 12 patients.

Mean age at surgery was 65.4 vs. 68.5 years ($p > 0.05$), mean VAS for pain was 8.6 vs. 7.5 ($p > 0.05$) and mean pre-operative UCLA score was 16.3 vs. 11.4 ($p < 0.05$). Mean pre-operative ROM was 78.2° (82.2° vs. 77.6° , $p > 0.05$) of anterior flexion, 86.1° (83.4° vs. 90.5° , $p < 0.05$) of abduction, 67.3° (76.3° vs. 65.0° , $p < 0.05$) of external rotation; internal rotation reached meanly the sacrum.



Results/2

At intermediate follow-up better results were found in group B, showing wider improvement of the anterior flexion at 3 weeks (111.4° vs. 123.5° , $p < 0.05$) and 3 months (137.3° vs. 150.8° , $p < 0.05$); of the abduction at 3 months (137.3° vs. 150.0° , $p < 0.05$) and 1 year (159.3° vs 167.5° , $p < 0.05$) and of the UCLA score at each follow-up ($p < 0.05$). No statistical significant difference was achieved for any of the measurement at 2 years follow-up, except for the UCLA score.



Conclusion

Although comparable results are showed at final follow-up, faster recover of the ROM is provided with capsular release when associated with LHB tenotomy in subjects with shoulder stiffness. Furthermore, return to daily activity assessed to UCLA score is achieved in a faster and more complete fashion in these subjects



Conclusion