Management of Adhesive Capsulitis in Physical Medicine and Rehabilitation Department: A Comparative Study

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Received date: September 03, 2019; **Accepted date:** September 17, 2019; **Published date**: September 25, 2019

Abstract

Objective: This study aimed to compare the outcome of two different populations, diabetes mellitus (DM) patients with adhesive capsulitis of the shoulder (ACS) and those with idiopathic ACS undergoing rehabilitation treatment.

Methods: A retrospective study was carried out between January 2005 and December 2016 in Physical Medicine and Rehabilitation (PMR) Department including patients diagnosed with ACS divided into two groups: diabetic ACS (G1) and idiopathic ACS (G2) (N=166 patients with 177 ACS). Both groups were evaluated before and after 3 months of a conventional physical therapy program. Epidemiological characteristics were gathered. Pain was measured with a visual analog scale (VAS), abduction and external rotation (ER) range of motion (ROM) with goniometry and internal rotation with hand behind back (HBB). Functional disability was assessed by the Constant modified score and general satisfaction by a Likert verbal scale.

Results: The mean age was 56 Ñ 7.3 years for G1 and 57 Ñ 10.6 years for G2. The sex ratio was respectively 1.25 and 0.47 for G1 and G2. A statistically significant improvement was noted in pain, ROM, and the modified Constant score after 3 months of treatment ($p<0.05$) as well as a general satisfaction in both groups. This improvement was significantly better in G2 than G1.

Conclusion: This study suggests that rehabilitation care is beneficial among population suffering from ACS with better results for the idiopathic one. This care should be early and regular with a balance in the diabetic in order to ensure a better response of the treatment.

Keywords: Shoulder; Bursitis; Diabetes mellitus; Rehabilitation; Comparative study

Introduction

Adhesive capsulitis of the shoulder (ACS), also referred to as frozen shoulder, is a common disabling but self-limiting condition from progressive Ẑbrosis and ultimate contracture of the glenohumeral joint capsule. HẌe condition is associated with pain, limited range of motion (ROM), sleep deprivation, anxiety, and disability that may be hugely disruptive and impact nearly every aspect of daily living and occupational activities of an individual [1-5]. HẌe etiology is classiẐed as primary (idiopathic) and secondary (diabetes, post-traumatic or post-surgical, cervical radiculopathy, thyroid disorder, myocardial infarction) [6]. Preferentially women 30ı60 years old are aẉected, but it can occur in patients of any age [7]. HẌe prevalence of primary adhesive capsulitis is reported to aẉect 2% to 5.3% of the general population and secondary adhesive capsulitis related to diabetes mellitus (DM) is reported to be between 4.3% [8]. HẌe mean age of onset for capsulitis in diabetic patients is lower than in the general population, the duration of the disease is longer and the response to treatment is lower. Bilateral involvement is seen more among diabetics [9].

Many physical therapy and home exercises can be used as a Ẑrst-line treatment for adhesive capsulitis [10]. Physical therapy has been shown to ld

rotator cuw or a glenohumeral arthropathy based on clinical and radiological investigations.

All participants gave oral consent for the study.

Methods

We carried out a retrospective study between January 2005 and December 2016 including 166 patients with 177 ACS. HXe Ẑrst group (G1) was composed of 97 DM patients with 104 ACS. HXe second one (G2) included 69 patients diagnosed with 73 idiopathic ACS.

Patients were asked about their occupation, dominant arm, medical history, DM history (chronicity, type, and complications), awected arm, medical treatment, time when they started to experience the discomfort when moving the arm, and consultation delay.

Assessments were made at baseline (before the Ẑrst treatment session) and arer 3 months of physical therapy.

For assessing pain during shoulder joint movement, subjects used a visual analog scale (VAS) [15]. HXe reliability of this test was reported to be 0.94 for literate and 0.71 for illiterate patients [16].

In the present study, active and passive abduction (in the frontal plane) and external rotation (with the arm at 0 degrees of abduction) ROM was measured with a conventional goniometer as per the guidelines given by the American Academy of Orthopaedic Surgeons [17]. Goniometric measurements are highly reliable provided measurements (test-retest reliability: 0.94 í 0.98) [15,18].

Hand behind back (HBB) reach was measured in centimeters using inch tape with subjects in the standing position to assess the internal rotation. HXey were instructed to achieve the maximum HBB reach position by moving their

Shoulder abduction	97.33 Ñ 32.22	95.89 Ñ 35.67	NS
Shoulder ER	13.84 Ñ 10.26	13.83 Ñ 9.55	NS
HBB	54.57 Ñ 4.66	54.12 Ñ 6.26	NS
Constant modified score	31.60 Ñ 6.82	29.87 Ñ 8.33	NS

BMI: body mass index; NS: non-significant; **: p<0.01

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