

Adhesive Capsulitis Treatment with Oral Steroids

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Abstract

Sixty patients of Adhesive Capsulitis shoulder were studied. The patients were randomly placed in two treatment groups. One group received short course of oral prednisolone, and other group received no specific medication. The patients in both the groups were advised to perform pendular exercises at home. The improvement in night pain showed a significant difference in two groups, with the prednisolone treated group improving rapidly. The recovery in pain at rest and on movement and improvement in range of movement was not significant.

Introduction

Adhesive Capsulitis of shoulder is a common cause of severe and prolonged disability. The syndrome is characterized by pain and limitation of shoulder movement in absence of any recognised intrinsic abnormality. It was first described by Putman in 1882¹ and later by Codman² The initial presentation is the pain, which is generalized and referred to upper arm, the back and the neck. The pain is more severe in early stages and disturbs sleep. The limitation often persists even after prolonged follow up^{3,4}.

The pathogenesis of adhesive capsulitis is uncertain. De Palma reported that any condition that hindered scapulohmeral motion, caused muscular inactivity and predisposes the patient to adhesive capsulitis⁵ Neviasser⁶ Found Capsular adhesions to under lying humeral-head upon surgical exploration for Adhesive Capsulitis.

Macnab⁷ suggested that partial interruption in blood supply to a tendon can cause degeneration of tendon collagen followed by a type IV auto immune reaction.

Bulgen et al reported an association

between Adhesive Capsulitis and HLA B27 antigen positivity⁸.

It is unclear whether the contracture of the shoulder capsule is a passive process related to lack of motion or on active associated with capsular inflammation.

Wide range of therapeutic regimens have been advocated for treatment of Adhesive Capsulitis. These include local steroid injections^{9,10} manipulation under anaesthesia,^{11,12} Physiotherapy^{13,14} traction¹⁵ Radiotherapy¹⁶ and Stellate ganglion blocks¹⁷. All these therapeutic measures have no long term advantage.

Blockey et al¹⁸ compared oral steroids to placebo in 31 cases, and reported a significant improvement in pain but not range of movement. Kessel et al¹⁹ found MUA and oral steroids more effective than MUA alone. Lloyd-Roberts and Fench⁹ compared steroid injections and MUA to oral prednisolone and found the former regimen better. Bindr et al²⁰ in a controlled study reported improvement in pain but not in range of motion. Non steroidal anti-inflammatory drugs are widely used in the treatment of Adhesive Capsulitis but are of doubtful value^{21,22,23}

The aim of this study was to ascertain beneficial effects of a short course of oral prednisolone therapy in patients of Adhesive Capsulitis.

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Table-I
Pain Complaint in 60 Patients in the Initial Visit

	No. of Patients	Percentage
Pain at night	36	60%
Pain at rest	10	16.6%
Pain on movement	14	23.3%
Total	60	100%

Table-II
A Comparison of mean and range of movement in total number of patients at 6 months follow up

	A) Initial Visit		(B) 6 Months	
	Mean	Range	Mean	Range
FLX	78°	50-90°	95°	80-110°
EXT	26°	20-30°	38°	30-50°
ABD	78°	60-90°	96°	80-110°
ADD	25°	20-30°	37°	30-45°
IR	31°	25-45°	46°	25-65°
ER	31°	25-45°	48°	30-65°

Table-III
Comparison of mean of movement in 2 treatment groups at At 6 months follow up

Oral Steroid group (30 patients)		:	Non treatment group (30 patients)	
Mean Initial Visit (A)	Range 6 months (B)	:	Mean Initial (A) Visit	Range 6 months (B)
Movements				
FLX	78°	95°	79°	98°
EXT	25°	37°	26°	40°
ABD	76°	93°	80°	99°
ADD	25°	37°	24°	36°
IR	29°	47°	32°	45°
ER	31°	46°	31°	46°

Patients and Methods

Sixty 60 patients who complained of pain and stiffness of the shoulder were studied. The patients were selected according to the following criteria²⁴:

1. Spontaneous onset of pain localized to shoulder region, pain increasing in severity and usually worse at night.
2. Limitation of all shoulder movements by at least 50%.
3. No clinical and radiological identification of lesion of Shoulder.

All these patients had restriction of active and passive movements of shoulder with pain and sleep disturbances of at least 1 month duration.

The patients with, history of generalized arthritis, peptic ulcer, Diabetes, hemiplegias, serious infections, cervical radiculopathy and other contraindications to systemic steroids were excluded from the study.

There were 34 male and 26 female patients the age range was 45-70 (mean 55.4). The duration of presentation varied from 1-12 (mean 6.0) months. 41 patients had involvement of non dominant shoulder, and 19 of the dominant shoulder. The onset of symptoms was spontaneous in all the patients, 10 patients and history of mild trauma.

Pain X-rays of shoulder and haemograms in all patients were normal. HLA B27 antigen was done only 6 patients and reported absent.

The Clinical assessment was done before the treatment and at the end of 6 weeks, and thrice in next 6 months at 2 months intervals.

Pain was recorded as pain at night, pain on movement and pain at rest during the day.

The range of passive shoulder movement was recorded by a goniometer in six movement parameters of (FLX) flexion (EXT) Extension, (ABD) Abduction (ADD) Adduction, (IR) Internal rotation and (ER) External rotation. The variations between the patient range at the initial visit, subsequent visits and at the end of 6 months were recorded.

The patients were randomly placed in one of the two treatment groups.

A. Treatment group (30 patients)

Prednisolone 10 mg. was given to these patients as a single morning dose for a period of 4 weeks. The dose was then reduced to 5 mg. a day for another 2 weeks, before therapy was stopped.

B. Non Treatment Group (30 patients)

These patients were allowed to take non salicylate analgesic agents and Diazepam if the pain was not tolerated and had sleep disturbed.

The patients in both the study groups were advised to perform pendular exercise for 2-3 minutes every hour at home.

Results

All the patients before entering the study had received treatments with various drugs mostly NSAIDS, but only none (15%) reported little improvement in pain. The patients had not received any advice on physiotherapy or general management of shoulder. Only 10 patients are advised to gently move the shoulder and other to rest the shoulder.

At presentation 36 patients had pain at night and had disturbed sleep, 10 patients had pain at rest and 14 patients complained of pain on movement.(Table-I)

On examination at the first visit the mean and range of each movement parameter was as follows : FLX.78O (50-90)O ;EXT 26 O (20-30O) ABD 78O (60-90)O ADD 25O (20-30O) IR 31O (25-45O); FR 31O (25-45O).

The recovery in range of movement was recorded in two treatment groups on subsequent visits and at the end of follow up (Table-II).

There was no significant improvement in treated group in recovery of individual movement parameter. Arm dominance did not influence the outcome (Table-III).

The two groups showed initial recovery in pain. The improvement in pain at night and pain at rest, showed severe pain when prednisolone

was withdrawn, which subsided spontaneously.

Out come at 6 months:

All patients showed improvement in pain during the course of study. 10 still had pain at the end of 6 months. A comparison of the range of movement in two groups was insignificant.

Discussion

The short course of oral prednisolone in some patients of Adhesive Capsulitis with intense pain and sleep disturbances is useful. This was not associated with any serious side effects. Severe pain recurred only in 4 patients when the prednisolone was stopped, NSAID were found to be of little value. 10 patients only had been advised to gently move the shoulder. Both the groups were advised home pendular exercises, A marginal improvement in patients in no treatment group suggested that pendular exercise may be important in initiating recovery.

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