TAJ December 2002; Volume 15 Number 2

ISSN 1019-8555
The Journal of
Teachers Association
RMC, Rajshahi

Original Article

Intrasynovial Injection of Methylprednisolone Acetate in the Treatment of Adhesive Capsulitis of Shoulder: A Retrospective Study

Bipul Kumar Dam*

Abstract

This study was done in the Out Patient Department of Rajshahi Medical College Hospital. One hundred and sixty two patients of different age group and sex, treated by intrasynovial injection of methylprednisolone acetate were followed up as out patients and were included in the study. Apart from few side effects almost all patients showed good response in respect to pain and joint movement with intrasynovial injection. Out of 21 mild diabetic patients, only 3 patients showed a high level of blood glucose and out of 17 mild hypertensive patients, only 4 patients showed increase in blood pressure. Twelve patients complained of mild face and ankle oedema that gradually subsided after cessation of the treatment. Almost all the patients in this study group were previously treated outside by various types of non-steroidal anti-inflammatory drugs.

TAJ 2002; 15(2): 71-73

Introduction

Adhesive capsulitis of shoulder, which is commonly known frozen shoulder or periarthritis, is a common problem of age group 50 to 70 years. It is a condition of unknown aetiology characterized by gradually progressive, painful restriction of joint motion over months to years[1]. Some predisposing factors are blamed for the causation of the ailments such as tendinitis or rotator cuff; bicipital tendinitis; muscle imbalance developing from inactivity; reflex sympathetic dystrophy and degenerative changes in the gleno-humeral joint[2]. Individuals in the 5th and 6th decades show insidious onset and develop during a period of relative inactivity in use of the shoulder, the arm hanging constantly at the side. In adhesive capsulitis there is uniform limitation of all gleno-humeral movements without evidence of inflammatory or destructive changes[3]. Some vague antecedent injury may be blamed for the increasing pain stiffness of the shoulder. Discomfort is worse at night and interferes with sleep. Condition progress over several weeks to months, joint movement gradually diminishes eventually little or no motion remains. During the period of fixation and non-use the scapular muscles become atrophic, the humeral heads held high against the acromion as compared with opposite side. Often signs of reflex sympathetic dystrophy develop in that hand; swelling of the fingers; shiny atrophic skin; mottled dusky discolouration, coldness hyperhydrosis or hypohydrosis, hypersensitivity, marked limitation of motion[5, 6].

* Associate Professor, Department of Orthopaedic Surgery, Rajshahi Medical College, Rajshahi-6000, Bangladesh.

Materials and Methods

One hundred and sixty two patients of varying age group (50-70 years) with adhesive capsulitis were treated by intrasynovial injection of methylprednisolone acetate into the shoulder joint. All the injections were given through the posterior aspect of shoulder joint in the sub-acromial route. Patients with varying degrees of pain and restriction of joint movements were treated (Table-6). Out of these patients, 21 had mild diabetes and 3 patients showed mild increase in blood sugar, the rest 18 patients did not show any change. 17 patients had mild hypertension of which 4 patients showed slight increase in blood pressure and the rest 13 patients had no change in pressure. So far the age is concerned, 65 patients belong to 5th decade, 57 t0 6th decade and 40 patients belong to 7th decade. In 92 patients the affected limb was left and rest 70 had right side affection. 107 patients did not receive physiotherapy and 55 patients received physiotherapy. In this study 92 patients were male and 70 were female. The composition of the drug used in each ml is methylprednisolone acetate 40 mg, polyethylene glycol 3350-sodium chloride-myristyl-gama-pocolinium chloride 0.20 mg-water for injection. The injection was given one ample into the synovial cavity every ten days for 3-4 sittings. Patients were asked for active exercise of the shoulder as soon as pain permits.

Results

One hundred and sixty two patients of Adhesive Capsulitis of shoulder with varying degrees of pain and joint stiffness were treated in this series. All the patients were treated by intrasynovial injection of methylprednisolone acetate through the sub-acromial route. All the patients became free from pain and stiffness on an average of five weeks (earliest 3 weeks & latest 8 weeks) of treatment. The age of involvement was from 5th to 7th decade; right-sided affection was in 70 (43.21) and the left sided affection was in 92 (56.79%). The involvement of male and female patients of this series, 21 were found mild diabetic during the treatment and only 3 (14.28%) patients showed mild increase in blood sugar; 17 patients were mild hypertensive and blood pressure and marked insignificantly only in 4 (23.52%) patients. 55 (33.96) patients had marked limitation of movements, so physiotherapy was advised; remaining 107 (66.04%) patients did not require physiotherapy. Overall result of treatment of adhesive capsulitis with intrasynovial injection of methylprednisolone acetate is satisfactory.

Table-1: Age of patients in decades (n=162)

Decade	Number	Percentage
5th	65	4.12%
6th	57	35.18%
7th	40	24.69%

Table-2: Side of affection (n=162)

Side	Number	Percentage
Left	92	56.79%
Right	70	43.21%

Table-3: Sex distribution (n=162)

Sex	Number	Percentage
Male	92	56.79%
Female	70	43.21%

Table-4: Changes in blood sugar (21) and blood pressure (17)

Items	Number	Changes found in	Percentage
Diabetes	21	3	14.28%
Hypertension	17	4	23.52%

Table-5: Associated physiotherapy (n=162)

Items	Number	Percentage
Without physiotherapy	107	66.04%
With physiotherapy	55	33.96%

Table-6: Range of motion (ROM) in degrees (n=162)

Items	ROM	Number	Percentage
Diabetes External Rotation	30° -50°	104	64.19%
	50° -70°	58	35.81%
	0° -20°	130	80.24
	20° -30°	32	19.76

Discussion

Adhesive capsulitis of shoulder is a common problem in our country in the 5th and 6th decade of life. The characteristic feature of frozen shoulder is the uniform limitation of gleno-humeral movements without evidence in inflammatory or destructive changes[7]. Though somebody claims the diseases a self-limiting one, the patients remain free from pain and stiffness over a period of months or years but the acute stage of the disease is very painful and disturbing to the patient. Even a slight movement of the shoulder in any direction elicits severe pain. The patient cannot sleep at night due to intense pain; pain and stiffness go side by side in a vicious cycle. The pain is felt at the deltoid insertion and radiates along the outer side of the arm to the back of the forearm and hand. Gradually it increases in severity and often prevents from sleeping on the affected side[8]. The treatment with intrasynovial injection of methylprednisolone acetate for 3-4 consecutive sitting at an interval of ten days relieves the pain to a reasonable degree. Sometimes 2 ml of local anaesthetics are taken along with the solution so that the injection becomes less painful. Adhesive capsulitis may sometimes be confused with other similar conditions of the shoulder like supra-spinouts tendinitis, sub-acromial bursitis, calcified deposit in supra-spinouts tendon, minor tear of supra-spinouts tendon etc. A careful history, clinical and radiological examination excludes the possibilities.

References

1. Turek S L. Orthopaedics: Principles & their Application, 3rd Asian Ed. 1977; 835.
2. Hitchcock H H, Bechtol C O. Painful shoulder, Observations on the role of the tendon of the long head of the biceps brachii in its causation. J Bone Joint Surg. 1948; 30A: 263.
3. Adams J C. Outline of Orthopaedics: Adhesive Capsulitis. 9th ed. 1981; 244.
4. Apley's System of Orthopaedics and Fractures 6th ed. 1982; 162.
5. Lippman R K. Frozen Shoulder, periarthritis; bicipital tenosynovitis. Arch Sugr. 1943; 47:283.
6. The Frozen Shoulder. Surg Clin North Am. 1951; 31:367.
7. Lundberg B J. The Frozen Shoulder. Acta Ortho Scand (Suppl) 1969; 119.
8. Apley A G, Solomon L. Apley's System of Orthopaedics and Fractures, 6th ed. 1982; 162.

All correspondence to:
Dr. B. K. DAM
Associate Professor
Department of Orthopaedics,
Rajshahi Medical College
Rajshahi-6000, Bangladesh.

Corrigendum

1. Co-author's name and address should be read as: Dr. Suzon Al Hasan, FCPS (Physical Medicine), Assistant Professor, Department of Physical Medicine, Rajshahi Medical College, Rajshahi-6000, Bangladesh in the article titled 'Clinical Pattern of hand Injuries: Analysis of 153 cases' in the TAJ Dec 2000 Vol 13 No 2 Page 105-7.
2. In the address of co-author Dr. Md. Yusuf Ali, 'Department of Physical Medicine' should be read as 'Department of Medicine' in the article titled 'Soft Tissue Rheumatism: Modalities of treatment-A review' in the TAJ Jun 2001 Vol 14 No 1 Page 37-40 .
3. The article titled 'Effect of Supervised Physiotherapy in Ankylosing Spondylitis' in the TAJ Jan 2002 Vol 15 No 1 Page 37-42 should be read as an 'Original Article' instead of 'a review'.