

Efficacy of Corticosteroids injection in De Quervain Disease

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ABSTRACT

Aim: To prove efficacy of steroid injection in DeQuervain disease in terms of absence of all three diagnostic criteria in our population.

Study design: Descriptive cross sectional study was carried out by using 'non-probability' purposive sampling technique.

Setting: The study was conducted in the Orthopaedic Department of Services Hospital & Avicenna Hospital, Lahore.

Duration of study: It was conducted from November 28, 2011 to May 28, 2012.

Method: 155 adult patients, fulfilling the inclusion criteria, were included in the study selected from the outpatient department by using sample size calculator. A single corticosteroid injection (0.5 ml of Inj. Triamcinolone containing 20mg of corticosteroid +1.5 ml of 2% xylocain) was given to the patients in the outpatient department.

Results: Out of 155 patients, 123 were successfully treated with corticosteroid inj. The percentage of successfully treated patients was 85.2%. The mean age was 40.4 yrs & female to male ratio was 10.4.

Conclusion: De Quervain tenosynovitis is best treated with corticosteroid injection in our population.

Keywords: Abductor pollicis longus, De Quervain's disease, extensor pollicis brevis, efficacy,

INTRODUCTION

De Quervain tenosynovitis is a painful and often disabling condition of the first dorsal compartment of the wrist. It is prevalent among individuals who perform activities using their hands and thumbs in a repetitive fashion. Despite great interest in the condition, its etiology and pathology remains uncertain. In the last few years several authors have reported a relationship between DeQuervain disease, pregnancy and lactation¹. In one of the studies conducted at Brown University School of medicine United States, 28 out of 42 patients were relieved with corticosteroids injection, with the success rate of 66%². Another study conducted at Khon Kaen University, Thailand, reported an overall success rate of 95% for the treatment of De Quervain disease with corticosteroids³. De Quervain tenosynovitis can be treated by non-operative and operative treatment. This condition usually responds well to non surgical management, with relevant published data showing that corticosteroid injection alone, with an 83% cure rate, is the most effective treatment for the

condition. The effectiveness of injection therapy is often attributed to anti-inflammatory effects of corticosteroids but the exact mechanism of action remains unclear. The study is conducted in the orthopaedic department of Services Hospital Lahore, where 155 patients are selected randomly for the study both female and male patients. A single injection of corticosteroid (0.5ml of Inj. Triamcinolone containing 20mg of corticosteroid+1.5ml of 2% xylocain) is injected in the first dorsal (extensor) compartment of the wrist. The purpose of this study was to prove the efficacy of steroid injection in De Quervain disease in terms of absence of all three diagnostic criteria adopted for the current study in our population.

MATERIALS AND METHODS

The study was conducted in the outpatients department of orthopedic surgery of Services Hospital Lahore from November 28, 2011 to May 28, 2012 (6 months). 155 adults of age between 30-60 years both male and females having pain and tenderness over radial styloid and positive Finkelstein were included in the study. The sampling technique was 'non- probability' purposive sampling. The exclusion criteria of the study were arthritis of radio carpal joint, arthritis of first carpo metacarpal joint, previous fracture of wrist, previous surgery of wrist and previous injection for DeQuervain disease. According to sample size, 155 patients fulfilling the inclusion criteria were selected from the outpatient

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department. The informed consent was taken for assigning them to a particular procedure and using their data for research. They were assured regarding confidentiality and expertise. For each patient detailed history including demographic information (age, gender & address) was taken and recorded. Single corticosteroid inj. (0.5 ml of inj. Triamcinolone containing 20mg of corticosteroid + 1.5 ml of 2% xylocain) was given to the patients in the outdoor department. Follow-up was done at the end of first week. All the data were recorded on especially designed performa. The collected data was entered and analyzed accordingly using SPSS version 11 through its statistical program.

RESULTS

Study sample consisted of 155 patients. Mean age of the sample was 40.41 years with standard deviation of 7.5. The youngest patient was 30 years of age and oldest patient being 60 years of age. The patients were divided in to three groups. Out of which most of the patients (59.4%) affected were in age group 30-40 years, 32.3% were in age group 41-50 years and 8.3% were in age group 51-60 years. Gender base segregation of patients showed more female patients as compared to male patients. 111 patients were female out of 155 total patients while male patients were 44. The female to male ratio is 10.4 (Table 1).

Table 1: Frequency distribution of patients according to Gender (n=155)

Gender	Frequency	%age
Female	111	71.6
Male	44	28.4
Total	155	100

On basis of efficacy of corticosteroid injection patients were divided into two groups, successfully treated and the other one in which treatment was unsuccessful. 132 patients were successfully treated with 85.2 percentage of success. 23 patients were unsuccessful in the treatment (Table 2).

Table 2: Frequency distribution of patient according to efficacy of corticosteroid injection. (n=155)

Efficacy	Frequency	%age
Yes (Successful)	132	85.2
No (Failure)	23	14.8
Total	155	100

DISCUSSION

The evaluation and treatment of DeQuervain tenosynovitis has evolved since the description by De Quervain in 1895. Most of the patients of De Quervain disease are best treated with corticosteroid

injections. There are other non-surgical methods as well but corticosteroid injection alone has success rate of 83%⁴. Complications of corticosteroid injection are tendon rupture, skin de-pigmentation, atrophy of subcutaneous fat, infection and superficial radial nerve neuritis. There is variation in outcome of corticosteroid injection among different populations. In one of the study conducted at Brown University School of medicine in United States, 28 out of 42 patients were relieved with corticosteroid injection with success rate of 66 percent². In another study conducted at Khon Kaen University, Thailand reported an overall success rate of 95% for the treatment of De Quervain disease with corticosteroid injection³. The present study determined the efficacy of corticosteroid injection in our population. Not much work has been done in Pakistan on this subject. In this study majority of the patients were females. This is in concordance with the study conducted by Wolf, Sturdivant and Owens which showed that women had significantly higher rate of De Quervain's disease as compared to men⁴. This can be explained by the fact that women are more involved in doing household work like cleaning and washing clothes, utensils, looking after children, using electronic devices etc. which all involved repeated movements and may lead to overuse syndrome. In this study 93 females out of a total of 111 female patients were successfully treated with corticosteroid injection and among male 39 were successfully treated out of total of 44 patients. Efficacy of corticosteroid injection in this study is 85.2% which is in concordance with study conducted by Carton A. Richie, DO and William⁵ which showed the successful percentage of corticosteroid injection in DeQuervain disease to be 83%. The combination of injection and splinting resulted in greater number of treatment failure 39%. This outcome is due to Wolffs law as applied to tendons that is the tissue heals and remodels in accordance with stresses placed upon them. Technique of injection and corticosteroid used vary in different studies. Technique may involve one point injection, two point injections and four point injection as described by different researchers. In this study we use single point injection in which corticosteroid injection is made at a single point along the radial side of wrist at the most tender point along the path followed by extensor pollicis brevis and abductor pollicis longus. In our study triamcinolone steroid 0.5 ml containing 20 mg of drug is used along with 1.5 ml of 2% xylocain is used. In this study DeQuervain disease involves 117 right hands and 38 left hands with the right to left side ratio of 3:1. This is in concordance with the study conducted by Costantino Rossi and Paolo Cellocco which showed that right

wrist is more involved in DeQuervains tenosynovitis in cases of athletes involved in playing volley ball⁶.

CONCLUSION

DeQuervain's tenosynovitis is best treated with corticosteroid injection in to the first dorsal extensor compartment. People in younger age group are more affected by this disease. Female gender is more affected in this study. Right sided wrists are more affected by DeQuervain disease. Surgery is only restricted to a small number of patients which do not respond to conservative measures.

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