

# The Role of Plaster Immobilisation with Local Ultrasound in the Treatment of de Quervain's Disease of Wrist

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**An alternative method of treatment in cases of de Quervain's disease has been studied by plaster immobilisation of the wrist along with local ultrasound therapy at the region of radial styloid process through a window in the plaster. The procedure is safe to all types of cases including patients suffering from diabetes and gastroduodenal ulcers without use of any parenteral or oral drugs.**

## INTRODUCTION

The de Quervain's disease of wrist is a painful inflammatory condition due to stenosis of the common sheath of abductor pollicis longus & extensor pollicis brevis at the region of styloid process of radius. This condition was first described by de Quervain in 1895. He pointed out that repeated and excessive movements of the thumb amongst the workers were responsible to such disabled condition. Later, his theory was appreciated in stenosing tenosynovitis of peroneus longus and in trigger fingers.

## MATERIAL AND METHODS

In the present series, the method of treatment is based on complete rest to the part by plaster immobilisation and application of local ultrasound over the common sheath for abductor pollicis longus & extensor pollicis brevis at the styloid process of radius through a window in the plaster (Fig. 2).

50 cases of de Quervain's disease irrespective of sex were collected from out-patient departments of Calcutta Medical College Hospital,

Burdwan Medical College Hospital and from private clinics. All of them were clinically examined and investigated to exclude other pathological conditions before the actual treatment was started. Later, each of them were treated with plaster immobilisation of the part and local application of ultrasound simultaneously. Ultrasound was given 8 minutes daily for three weeks with a frequency of 0.3 to 0.5 (pulsed wave) watts per sq. cm. After 3 weeks, plaster was removed without withdrawing the ultrasound therapy for 3 to 4 days more to ease the wrist and the thumb from stiffness due to immobilisation. Later, each patient was reexamined to compare the findings with those of before treatment.

## Method of Plaster Immobilisation

Below elbow complete plaster was done including the wrist and thumb. Proximally it was extended from midforearm and distally upto proximal to knuckle—more or less similar to the plaster as done in colles' fracture after manipulation. The forearm was kept in full pronation, wrist being in neutral position but with full adduction (Ulnar deviation). The

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Fig. 1. Showing the position of wrist and thumb with a window in the plaster.



Fig. 2. Showing the application of ultrasonic therapy through the window in the plaster.

thumb was kept in full abduction with flexion at CMC (carpo-metacarpal) joint and MCP (metacarpophalangeal) joint. Dorsally the plaster was extended upto midway between the wrist and knuckle and anteriorly upto the mid-palm so that patient can do full grip. The plaster was kept slightly loose to allow some active movements of thumb inside to avoid adhesion of the tendons with surrounding soft tissue. Lastly, a window was made to expose about 7 cm. x 7 cm. area around the radial styloid to accommodate the 'Sonar head' of the ultrasound machine (Fig. 1) for local treatment from 3rd day of immobilisation when the plaster was fully dry.

### OBSERVATION

50 patients were treated and clinical assessment was done to see the effect of therapy (Table 1).

It was observed that 88% (excellent 76% and good 12%) of satisfactory result was noted in the present series.

### DISCUSSION

The standard treatment of de Quervain's disease of wrist by infiltration of the common

**Table Showing the clinical assessment and results**

Clinical assessment	Results			
	Excellent	Good	Fair	Poor
1. Active abduction in extension, and adduction in flexion of thumb & wrist	Painless	Painless	Painless	Painful
2. Forced adduction of wrist & thumb (ulnar deviation)	Painless	Painless	Painful	Painful
3. Local tenderness	Nil	Present	Present	Present
Total No. of cases 50	38	6	2	4

sheath of abductor pollicis longus & extensor pollicis brevis with local hydrocortisone, and decompression operation of the sheath are universally accepted. Antiinflammatory drugs have also some role to relieve the patient from pain.

Because of the chance of local infection in diabetic patients infiltration with hydrocortisone is contraindicated. Similarly, operative treatment is better to be avoided unless diabetes is controlled. Lastly, infiltration of the sheath is not a very easy procedure. Unless the



solution is pushed into the space between the sheath and the tendons, even repeated injections will end in failure.

'Rest' to the part has definite role in the treatment of tenosynovitis. In view of the above facts without defying above procedures, the author in the present series tried to find out an

alternative treatment suitable to all types of cases including patients suffering from diabetes and gastroduodenal problems with high percentage of success. This combined procedure without any oral antiinflammatory drugs was not well documented in past in the treatment of de Quervain's disease of wrist.

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