Effectiveness of Oxygen-Ozone and Hyaluronic Acid Injections in De Quervain's Syndrome

M. MORETTI

Poliambulatorio Oberdan; Brescia, Italy

Key words: oxygen-ozone, hyaluronic acid, De Quervain's syndrome

SUMMARY - *De Quervain's syndrome is a tenosynovitis of the short extensor tendon and of the long abductor tendond of the first finger of the hand frequently found in our clinical experience. The effectiveness of traditional physical therapies proposed and cortisone injections must be to verify and even surgery on a long time does not always adequate results. The injection with oxygen / ozone and hyaluronic acid are effective in other forms of overload tendinopathy. We want to asses whether the SDQ can be effectively treated with this therapy.*

The De Quervain's Syndrome

The De Quervain's syndrome (SDQ), is a tenosynovitis that affects the tendons long abductor (LAT) and short extensor (SET) of the first finger of the hand that slide together in a single sheath within the channel of the extensors [1]. The disease often occurs in people who perform violent or highly repetitive movements with the first finger of the hand. For this is common among musicians, the tailors, who use a lot the mouse or computer keyboard and mothers, especially in the last feeding period, when the child becomes heavier; so that at the time of the description of the disease by De Quervain, this was known as a disease of the nannies and embroiderers. The common cause of SDQ is the edema that surrounds the tendons which are located in the wrist on the side of thumb. The irritation causes swelling of tissues around the tendon thus causing a change volume of the area or causing a thickening of tendons, and this means that they cannot slide as they should. The SDQ is not uncommon to find associated with carpal tunnel syndrome, trigger finger or the rhizoarthrosis.

Diagnosis

The diagnosis of clinical SDQ is mainly consists in the search of the Finkelstein's sign [1]. This clinical sign is positive when pain is evoked by flexing the hand on the ulnar side with the thumb abducted. The musculoskeletal ultrasound can be used to show the presence of excess synovial fluid thath distends the synovial sheath (figure 1) [9,10].

Therapy

The most used remedies are the classical physical therapies (laser, ultrasound and iontophoresis) that not have proved effectiveness and cortisone injections, whose effectiveness has not been demonstrated unambiguously and that can cause rupture and infection of the treated tendon [4,5,6]. The oxygen-ozone therapy is widely used as a remedy for the SDQ and it is a treatment that was effective in our experience [2,8]. Hyaluronic acid is an effective treatment for other overload tendinopathies [10,11,12] but there is no scientific literature on the subject

Aim of the study

We want to assess if injections with O_2/O_3 and HA, already tested for other tendinopathies are a good way to heal the SDQ.

Materials and methods

To assess whether injections with O_2-O_3 and AI are a good way to heal the SDQ 100 patients were selected. Patients had to have pain for at least

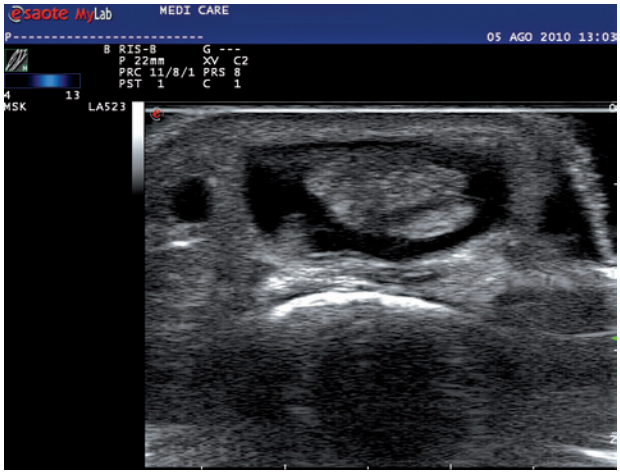
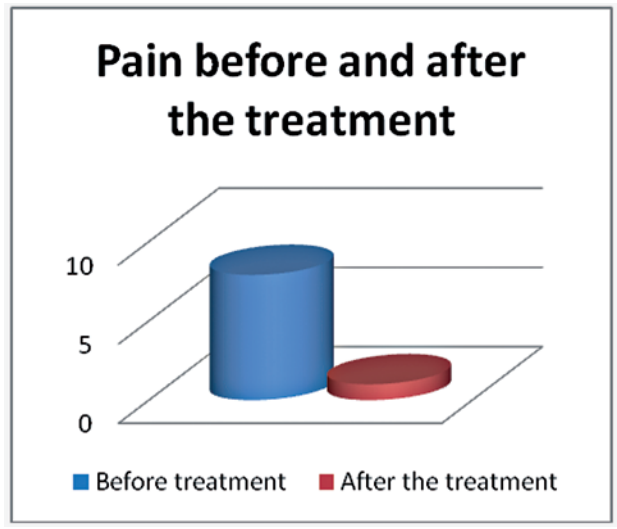
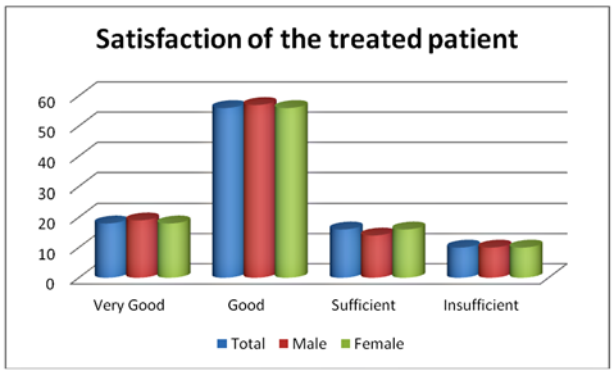


Figure 1 Example of one of the treated cases where we can observe a severe distension of the sheath due to abundant synovial effusion.





↑ Figure 2 In the graph the mean value of the pain before and after the treatment in the analyzed sample is shown.

← Figure 3 Satisfaction of trhe treated patients after 3 weeks.

three months and had already been subjected to traditional physical therapies, rest and cortisone injections with no benefit. The diagnosis must have been carried out with both a clinical evaluation and with ultrasound examination which was to detect the presence of a deposit such as to stretch the sheath of the LAT and SET. The injections were performed under ultrasound guidance to be certain of not going to damage the two tendons involved. Before 3 ml of O_2-O_3 were injected and then the AI (2 ml of 8 mg of product). Pain was assessed with VAS before therapy and after 3 weeks post-treatment. It was asked, again through a questionnaire, to express a personal opinion on the outcome of therapy in which the patient was asked to evaluate the treatment as very good in case of total disappearance of symptoms, good in the case of a persistence of symptoms that not affect normal daily activities, sufficient in case of persistent symptoms that partially affect normal daily activities and insufficient in case of persistent symptoms that affect so important to normal daily activities.

Results

The 100 patients selected were for 68% women, mean age of 53.3 years and for 32% men with a mean age of 53.4 years. The initial pain, expressed with the VAS scale, is a result of 7.9 and the end of 1.9 as shown in figure 2. The patient satisfaction is showed in the table 1 and in figure 3.

Conclusions

The SDQ is a very frequent tenosynovitis in patients who perform works that involve the continuous use of the first finger of the hand and the traditional therapies have not proven unequivocal-

Table 1 Satisfaction of the treated patients.

Satisfaction	*Total*	*Male*	*Female*
Very Good	18	19	18
Good	56	57	56
Sufficient	16	14	16
Insufficient	10	10	10
Total	100	100	100

ly effective. The O_2-O_3 and AI injections have been shown in our first assessment an effective method to heal the SDQ but an evaluation is required on a larger sample to propose this treatment on a larger scale as an alternative to conventional physical therapies and cortisone injections.

References

1 Paynter M. Urgent Treatment Centre, Bridgewater Community Hospital, Somerset. Identifying De Quervain's tenosynovitis. Emerg Nurse. 2006; 14 (1): 27-29.
2 Gheza G, Ipprio L, Bissolotti L. Ossigeno-Ozonoterapia in paziente diabetica con tenosinovite di De Quervain associataa rizartrosi /Oxygen-Ozone Therapy in a Diabetic Patient with de Quervain's Tenosynovitis Associated with Joint Arthrosis. International Journal of Ozone Therapy. 2002; 1 (2): 189.
3 Altay MA, Erturk C, Isikan UE. De Quervain's disease treatment using partial resection of the extensor retinaculum: A short-term results survey. Orthop Traumatol Surg Res. 2011; 97 (5): 489-93. Epub 2011 Jun 15.
4 Andréu JL, Otón T, Silva-Fernández L, et al. Hand pain other than carpal tunnel syndrome (CTS): the role of occupational factors. Best Pract Res Clin Rheumatol. 2011; 25 (1): 31-42.
5 Woon CY, Phoon ES, Lee JY, et al. Hazards of steroid injection: Suppurative extensor tendon rupture. Department of Hand Surgery, Singapore General Hospital, Singapore. Indian J Plast Surg. 2010; 43 (1): 97-100.
6 Peters-Veluthamaningal C, Winters JC, Groenier KH, et al. Randomized controlled trial of local corticosteroid injections for de Quervain's tenosynovitis in general practice. BMC Musculoskelet Disord. 2009; 10: 131.
7 Peters-Veluthamaningal C, van der Windt DA, Winters JC, et al. Corticosteroid injection for de Quervain's tenosynovitis. Cochrane Database Syst Rev. 2009; 3: CD005616.
8 Gheza G, Ipprio L, Bissolotti L. Ossigeno-Ozonoterapia in paziente diabetica con tenosinovite di De Quervain associata a rizartrosi. Rivista Italiana di Ossigeno-Ozonoterapia. 2002; 1: 189-192.
9 Nagaoka M, Matsuzaki H, Suzuki T: Ultrasonographic examination. of De Quervain's disease. J Orthop Sci. 2000; 5 (2): 96-99.
10 Gooding GAW. Tenosynovitis of the wrist. A sonography demonstration. J Ultrasound Med. 1998; 7: 225-226.
11 Moretti M. Effectiveness of Treatment with Oxygen - Ozone and Hyaluronic Acid in Osteoarthritis of the Knee. International Journal of Ozone Therapy. 9 (1): 25-29, 2010.
12 Moretti M. Can Oxygen-Ozone Injections in Sport Overuse Tendinopathies Be a Valid Alternative to Cortisone Therapy? International Journal of Ozone Therapy. 2010; 9 (1): 21-24.

M. Moretti, MD
Poliambulatorio Oberdan
Via Oberdan, 140
25128 Brescia, Italy
Tel.: +39 030 9701312
E-mail: dr.marcomoretti@libero.it