

HYALURONIC ACID "OSTENIL TENDON" IN PARTIAL THICKNESS TEARS OF THE SUPRASPINATUS TENDON-CLINICAL AND SONOGRAPHIC ASSESSMENT

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ABSTRACT

Objective: To determine the efficacy of Hyaluronic acid (HA) injections Ostenil Tendon concerning pain, functional activity of the shoulder and tendon recovery in patients with partial thickness tears (PTT) of the Supraspinatus tendon (SSP). The accuracy of Ultrasonography (US) for diagnosis of PTT of the Rotator cuff (RC), benefit of performance of US-guided procedures and monitoring of therapy have been proved.

Material and Methods: 23 patients with painful shoulder and sonographic proved PTT of the SSP were included. A Pain Diary with a ten point visual analogue scale, Shoulder Function Assessment (SFA) scale (0-70) and Questionnaires of the efficacy according to the patient and the physician were evaluated. US examination was provided by Mindray M5 scanner with multi-frequency linear transducer (7.5-10 MHz). Ostenil Tendon 40mg/2.0 ml was injected around the affected tendon once a week for a total of two injections. All applications were performed under US control.

Results: Pain was significantly reduced after the first injection and this effect was maintained until the end of the observational period. SFA Index was significantly improved, 74% of patients gave a very good and good assessment of the efficacy, which coincided with the opinion of the physician. 78% of patients had a complete recovery or improved structure of the SSP which was US demonstrated.

Conclusions: HA Ostenil Tendon led to a relatively rapid and sustained relief of pain and increased functional activity of the shoulder. US proved repair process of the tendon structure and gliding of the SSP as a result of lubricating and viscoelastic properties of the HA. No adverse events were observed. Injections under US control were accepted favorably by the patients.

Objective

To determine the efficacy of Hyaluronic acid (HA) injections Ostenil Tendon concerning pain, functional activity of the shoulder and tendon recovery in patients with partial thickness tears (PTT) of the Supraspinatus tendon (SSP). HA is a naturally occurring biological substance, representing an unbranched, high-molecular weight polysaccharide as a major component of ligamentous ultrastructure. Lubricating the tendon results in the relief of pain, improvement of the tendon function and reduction of the potential for adhesions. The accuracy of Ultrasonography (US) for evaluation of the RC, benefit of performance of US-guided procedures and monitoring of therapy have been proved. US imaging can be considered almost equally effective in detecting partial tears of the rotator cuff compared to MRI, particularly located in the area of the SSP.

Material and Methods

23 patients with shoulder periarthritis and sonographic proved PTT of the SSP were included. Including and excluding criteria are shown in Table 1. No NSAID, corticosteroids or topical analgesics were allowed during the study, as well as 48 hours prior to assessments. All patients had radiograph to exclude other pathologies at the discretion of the study physician (i.e. to exclude fracture). Shoulder Function Assessment (SFA) scale (0-70) was evaluated at all visits - on the baseline(first injection), on the second week(second injection) and two months after the baseline. Questionnaires of the efficacy according to the patient and the physician were assessed on the third visit. US examination was provided by Mindray M5 scanner with multi-frequency linear transducer (7.5-10 MHz) on the first and third visit. To objectify the MSU evaluation, two trained and experienced MS sonographers with at least 5 years experience in MSU scanned together each patient and reached consensus on the US findings. Ostenil Tendon 40mg/2.0 ml was injected around the affected tendon for a total of two injections at weekly intervals.

Statistical analysis

For VAS and SFA assessment Repeated measures analysis was used. For assessment of Bursitis χ^2 analysis was used.

Results

Pain during active movement was significantly reduced after the first injection and it was 6 fold reduced on the third visit. (Fig.1)
The index of SFA had a statistically significant improvement of all SFA criteria which correlated with increasing of the point number with 33 points, reaching 64 points. (Fig.2)
74% (n=17) of patients gave a very good and good assessment of the efficacy, which coincided with the opinion of the physician. (Fig.3&4)
No adverse events were reported. No subjects withdrew from the study during the treatment phase. 78% (n=18) of patients had a complete recovery or improved structure of the SSP which was US demonstrated. (Fig. 5)

We present sonographic images in transverse scan of SSP tendon showing PTT as hypochoic zone before treatment(Visit 1) and recovered tissue of the tendon after the treatment with Ostenil Tendon(Visit 3). (Image 1&2)

Conclusions

HA Ostenil Tendon led to a relatively rapid and sustained relief of pain and increased functional activity of the shoulder. Thanks to its tendoprotection, Ostenil Tendon increased patient quality of life which was proved by results of SFA scale and high level of patient and physician assessment. US proved healing process of tendon structure in the places of partial thickness lesions and enhance the SSP gliding as a result of lubricating and viscoelastic properties of the HA. No adverse events were observed. Injections under US control were accepted favourably by the patients.

Table 1

Including criteria	Excluding criteria
1. Age 18-80 years	1. Joint inflammatory and rheumatic autoimmune disease, infections
2. Clinical diagnosis: Shoulder periarthritis	2. Degenerative arthropathy, traumas, surgery in shoulder; Full thickness tears of the RC
3. Duration of the symptoms up to 7 days	3. Physiotherapy and topical corticosteroids application within a month before and during the monitoring
4. Pain by VAS over 25mm	4. Other diseases - diabetes mellitus, neurological diseases/incl. brachial plexitis, peripheral neuropathy/
5. Sonographic proved PTT of the RC	5. Neoplasms, chemotherapy, radiotherapy

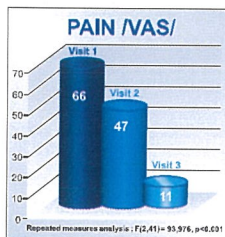


Figure 1

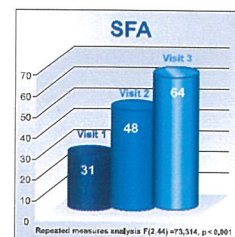


Figure 2

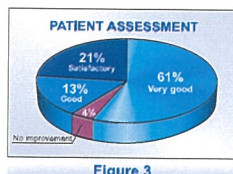


Figure 3

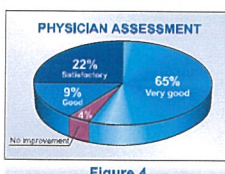


Figure 4

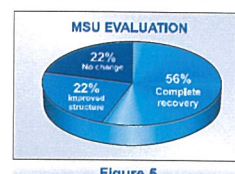


Figure 5

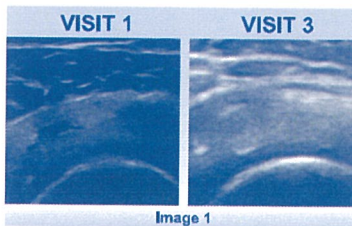


Image 1

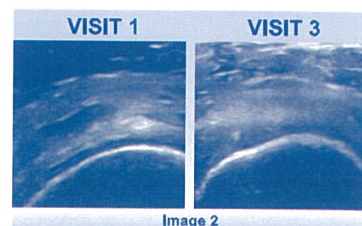


Image 2

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