

An integrated approach to the treatment of temporo-mandibular disorder with severe pain syndrome.

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Introduction.

Muscle-joint dysfunction of the temporo-mandibular joint (MSD TMJ) is the prevalence in the population from 11 to 44%. The use of occlusive therapy in the treatment of this disease is not always successful. One of the ways of correction of the hypertonicity of the muscles is the introduction into the affected muscle, botulinum toxin type A (BTA).

Materials and methods.

In our research involved 20 patients in age from 18 to 45 years old with clinical signs of MSD TMJ and prosopalgia.

To determine personal and situational anxiety of patients was used scale of Spielberg-Hannin. For visualization of the masticatory muscles TMJ was performed MRI- study.

Electromyography was performed before and after treatment.

In the first step of treatment, patients were made of a smooth rigid mouthguard on the lower jaw.

As a second step of treatment patients with was the local relaxation of the concerned muscles by injecting them with BTA.

Injectable muscle: m.pterigoideus lateralis, m. pterigoideus medialis, m.masseter, m. temporalis.

The total dose amounted to 100 Units BTA (Xeomin).

The BTA injection in m. pterigoideus lateralis was performed with ultrasound navigation. (Figure 1). (Figure 2).

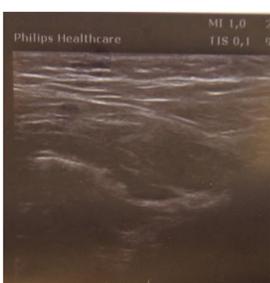


Fig. 1.

Injection in m. pterigoideus med. was performed using EMG navigation or without it. (Figure 3).

To select injection site (usually 3 points) in m. masseter, used the clinical findings. The classical scheme of the injection of this muscle has been edited according to the location of trigger points.

(Figure 4.).



Fig. 2.



Fig. 3.

The BTA injections was carried out in m. temporalis in obtaining clinical data for interest (painfull palpation, hypertrophy).

As side effects marked only the emergence of microhematomas at the injection site. Most often (90%) this complication occurred when the injection of the temporal muscle. Other side effects and complications of therapy weren't noted.

Results and discussion.

All observed were found to have high levels of trait anxiety according to the scale Spielberg –Hanin and built 72,5%. As a result of treatment, reduction of pain syndrome was noted in 85% of investigated. Reduction of clicks in the TMJ identified in 90% of cases. The amplitude of mouth opening increased in 95% of patients. Also, there was a significant improvement of standardized electromyographic parameters ($p>0,05$) (Table 1).

index	before	after
Poc temp %	70,92±4,03	83,5±0,89
Poc mass %	72,44±3,11	84,7±1,83
Poc med %	71,68±3,16	81,9±1,54
ASIM %	4,44±7,05	1,54±2,1
ATTIV %	-19,69±6,97	2,7±1,56
TORQ %	2,67±4,32	-0,064±1,96
IMPACT %	93,29±8,18	118,2±6,18

Tabl. 1.

MRI TMJ before treatment, all patients were determined multiple (more than 3) Hypo-MR-plots, which were located in the area of the muscle-tendon transition and in the middle of the abdomen. (Figure 5. 6).

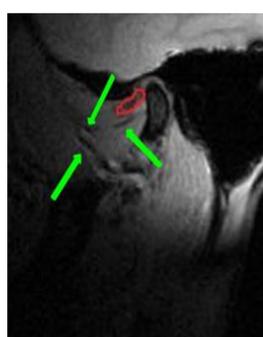


Fig. 5.



Fig. 4.

Such sites are localized in the m.pterygoideus lateralis, medialis and m.masseter. As a result of monitoring MRI after treatment revealed a decrease in the number of such plots, as well as their severity and reducing the diameter of the muscles in the abdomen. (Figure 7, 8.).

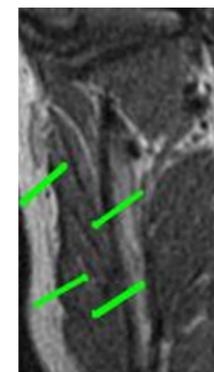


Fig. 6.



Fig. 8.

Ultrasound examination of the masticator muscles was defined hyperechogenic areas that were similar in size and location with hyperintensive areas on MR-tomograms.(Figure 9.).

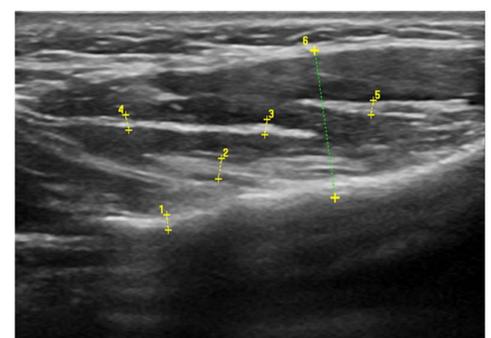


Fig. 9.

Elastography revealed that these areas have a density 3-4 times higher than the density of normal muscle tissue.

Conclusions.

1. Patients with MSD TMJ had a high level of anxiety according to the scale Spielberg-Hanina.
2. All patients included in the study had Hypo-Mr-plots in the affected muscles, which were subjected to a total or partial reduction after complex treatment. These data allow us to conclude that such areas are zones of local hypertonicity in the muscles.
- 3.The result of complex treatment was: reduction of pain, increased volume of active movements in TMJ, and normalization of standardized electromyographic parameters.

Acknowledgments

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