

POST-TRAUMA MYOSITIS OSSIFICANS TREATMENT: SHOCK-WAVE THERAPY ASSOCIATED WITH PHYSIOKINESITHERAPY**Buselli P¹, Saggini R²***¹UO Orthopaedic Rehabilitation "E. Morelli" Hospital, Sondalo; ²Physical and Rehabilitation Medicine "G. D'Annunzio" University, Chieti, Italy***Introduction**

Direct traumas after-effects are often noticed in muscle or muscle-tendon structures which may lead either to the evolution in calcific metaplasia linked to the deposition of calcium salts in the inflamed muscle tissue (1) or to the ossific processes of haematic collections (intrafascial or pedunculate ones).

The subject shows the evolution signs of this pathologic outline in a non-precocious phase of the post-trauma course, usually after 30 days. The most important clinical data are represented by reduced extensibility. As far as image diagnosis is concerned, the outline can be sufficiently defined by a radiograph, in case by CAT or NMR.

Materials And Methods

A group of 12 (26.3 ± 5.9 years old) sporting subjects suffering from myositis ossificans was observed. The subjects had suffered from direct contusion traumas or slashes mainly to thigh: quadriceps 7, adductors 2, biceps femoris, 1, biceps brachii 1, triceps surae 1. In some cases they had to be immobilised because of concomitant bone lesions.

All subjects showed a considerable reduction of the knee flexo-extension, which clearly limited their sporting activity. All subjects had been therapeutically approached through physical and rehabilitation therapies without any satisfactory result.

Thus, the proposed treatment foresaw the application of the shock-wave therapy (SWT; 3) (HMT OSSATRON OSA 140), with 3 administrations on the average, at an interval of 4 weeks (Table 1). In no case local anaesthesia was used. As a matter of fact, this treatment may cause modest pain which disappears at the end of the session. The first administration was carried out 40–180 days after the trauma.

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Table 1: Characteristics of the SWT (average±SD).

N. of treatments	N. per SW administration	Intensity (kV)
3.0±0.8	1350±228	16.4±1.0

The associated rehabilitation treatment was partially carried out with the assistance of a Reconditioning Therapist and partially self-managed by the subject. The patient check foresaw a clinical evaluation (with scores from 0-none, 1-fair, 2-good, 3-excellent), the extent of ROM deficit, the VAS survey (from 0 to 10) and the response to Fisher algometre (2) (from 1 to 6).

The clinical checks were carried out in the treatment period and 1 month after the end of the SWT cycle, that is to say after 3, 6 and 12 months.

Results

The first clinic recovery signs were already shown 48 hours after the first SWT and they became more and more evident after 14 days; furthermore, an improvement was seen after every following treatment.

SWT has always foreseen at least three treatment sessions in order to reach the complete functional efficiency, while the algic condition was significantly reduced before the third shock-wave treatment.

The clinical result was positive for all patients 1 month after the end of the last administration; at the end of the observation period the result was excellent for 9 cases, good for 2, fair for 1 case (Table 2).

Table 2: clinical evaluation at time 0 and after 1, 3, 6, and 12 months.

Time	ROM limitation					Visual An. Scale					Fisher Algometre					Clin.result final
	0	1	3	6	12	0	1	3	6	12	0	1	3	6	12	
Average	-41.7	-7.5	-3.8	-3.8	-3.8	5.2	1.5	0.8	0.5	0.5	2.2	4.1	5.6	5.7	5.9	3.7
±SD	22.1	8.4	8.8	8.8	8.8	1.3	1.2	1.1	1.0	1.0	0.4	0.6	0.8	0.7	0.5	0.7

In particular, three months after the end of the SWT four subjects returned to the same sporting level as before the accident.

The radiological check did not show any particular change within 6 months as from the end of the therapy despite the satisfactory clinical recovery; only check-ups after 12 months showed the resorption of the calcific deposits.

Conclusions

Based on this experience we can say that SWT combined to a correct rehabilitation therapy is an elective intervention method in post-trauma myositis ossificans. The SWT turned out to be simple to be administered and



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showed no particular problem both during and after the administration and no undesired effect was shown.

The difference between the clinical result and the radiographic outline is significant and at the moment it seems to be difficult to interpret it. For some of the subjects RX tests were carried out in following times and a further improved radiological outline was shown.

References

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