

ISMST
The International Society
for Medical Shockwave
Treatment



16th International Congress of the International Society for Medical Shockwave Treatment

June 27 – 29, 2013, Salzburg, Austria

Abstract Book

with the support of



LBI Trauma



Extracorporeal Shockwave Therapy (ESWT) in Osseous Non-Unions: A German Cohort Study

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Introduction

Shockwave therapy is more or less established as an alternative treatment to surgical interventions for impaired osseous healing like delayed or non-unions after fractures or arthrodesis. This cohort study looked for own results and best practice of focused shockwaves in adequate cases.

Methods

Between 2001 and 2010, 381 unselected bone fractures or arthrodesis with persistent impaired healing were included in this pilot study. Details about outcomes were received by questionnaires, X-ray-evaluations and transmitted information from doctors or the patients themselves.

Only hard facts concerning bony consolidation of the fracture gap has been of interest to assess bony healing.

Results

Overall 239/381 cases (63%) showed sufficient bony consolidation after ESWT. Cases of impaired fracture healing showed better (66%) success rates than those of impaired arthrodesis healing (47%). Healing rates in impaired unions ranged from 93% after scaphoid fractures to only 23% after talocalcaneonavicular arthrodesis.

Discussion

As long as there are no consistent definitions of pseudarthrosis and non-comparable results of surgical outcomes in cases of impaired osseous healing ESWT is an alternative to surgery in selected subgroups because of the satisfying success rates in selected groups of impaired bone healing.

Conclusion

As ESWT is a serious alternative to surgery in cases of impaired bone healing all physicians who use this option must be certificated and have to use comparable shockwave devices in the interest of improvement of successful therapy protocols for different bone healing complications.