

# ESWT for AVN of the talus

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**Device and producing company:**

DolorClast®, EMS

**Introduction:**

The talus is predisposed to AVN or bone death due to ischemia owing to its unique structure characteristic extraosseous arterial sources and variable intraosseous blood supply. Neither surgical operation nor conservative treatments are very effective.

**Methods:** We used an EMS DolorClast®, a radial extracorporeal shock wave therapy machine (made in Switzerland) to treat the patient with an energy flux density of 0.12 ~ 0.16 mJ/mm<sup>2</sup>. The impact points were chosen dependent on the pain location, 200 shocks at each point. Five treatments were performed.

**Results:** One year later the symptoms were markedly relieved and no complications were observed. The MRI also changed significantly. It showed that the low-signal-intensity segment in the talar dome was reduced and the articular surface was clearer than before.

**Discussion:** Shock waves can increase the pain threshold. Shock waves might generate micro-fractures to promote bone healing and the formation of new local microcirculation due to angiogenesis. Shock waves traveling through different tissues can generate mechanical stress at the interfaces with the effect of tensile and pressure stress on the cells. Tensile stress can cause the release of growth factors promoting microcirculation.

**Conclusion:** Extracorporeal shock wave treatment provided beneficial effects for this problem. This novel treatment modality resulted in significant pain relief and functional improvement.