

# **Spontaneous Osteonecrosis: Long-Term Effectiveness of Extracorporeal Shock Wave Therapy in the Treatment of Early Spontaneous Osteonecrosis of the Knee: a 2-year follow-up**

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## **Device and producing company:**

Piezuson 300, Wolf

## **Introduction:**

This work reports the results of fifteen cases of early spontaneous osteonecrosis of the knee successfully treated with extracorporeal shock wave treatment (ESWT). Due to its neo-angiogenic effect, ESWT can be suggested as an effective conservative treatment for spontaneous osteonecrosis of the knee.

## **Methods:**

Fifteen patients with medial femoral condyle osteonecrosis of the knee (one bilateral) were evaluated. Two patients had received a femoro-popliteal by-pass within the previous year, while five others presented with a deficit of the vascular axis of the homolateral lower limb documented by echo-color Doppler. A clinical evaluation was taken during initial diagnosis using KSS, McGill Pain Questionnaire (PPI, NRS, VAS). Plain radiographs, radioisotope bone scan and MRI confirmed the diagnosis of osteonecrosis. Patients were treated with a cycle of three ESWT sessions of 2000 pulses at 0.28 mJ/mm<sup>2</sup> delivered by a Piezuson 300 (Wolf) at 6.5 MHz performed in a one-month period. A clinical evaluation including MRI was performed one month, three months and 2 years after the treatment.

## **Results:**

The clinical evaluation showed significant improvement of the symptoms (the continuity of the cartilage with a reduction in bone marrow edema and no collapse of the lesion).

## **Discussion:**

The most effective treatment for osteonecrosis lesions without evidence of structural collapse is conservative treatment, with rest and no weight bearing. In our study, a single cycle of ESWT produced an improvement of the clinical and MRI aspects in eleven cases of spontaneous medial femoral condyle osteonecrosis of the knee. The neo-angiogenic effect of ESWT appears to accelerate the time required to decrease the symptoms.

## **Conclusion:**

ESWT might have the potential to curtail the progression of the disease and to avoid the need for surgical treatment.