

**PP-092****S1 osteoid osteoma radiofrequency ablation with neural canal temperature continuous monitoring**M.S. Bartoli, S. Bastoni, F.L. Giardina, E. Ferri, M. Gallazzi, **A. Daolio Primo***Istituto Ortopedico G. Pini, Milan, Italy*

Introduction: Percutaneous radiofrequency ablation is the treatment of choice for osteoid osteoma of the appendicular skeleton. However, this treatment is not as popular for spinal osteoid osteoma, due to the proximity to neural structures and the danger of thermal injury.

We report a case of CT-guided radiofrequency ablation of an osteoid osteoma adjacent to the posterior wall of S1 in a pediatric patient.

Methods and Results: N.C., 8 years old, female, reported a history of 14 months of low back pain radiating to left buttock, thigh and leg, relieved by NSAIDs, impairing daily activities. CT and MRI of sacrum showed an osteoid osteoma located in the soma of S1, adjacent to the posterior wall, slightly protruding in the neural canal. Posterior cortex was expanded but intact. Diameter of the lesion was 6 mm.

Under general anaesthesia, using CT guidance, we introduced the radiofrequency needle (Covidien Cool-tip™) into the sacrum, with the active tip just inside the nidus. In order to avoid nerve damage, we positioned a thermistor through a posterior approach in the spinal canal with the sensitive tip in the epidural space, close to L5 and S1 nerve roots on the left side. Cut-off temperature of the thermistor was set at 40°C. Radiofrequency ablation of the lesion was performed at 80°C for 8 minutes. Final CT scan showed no significant side effects. The patient did not show any sign of neurological damage; 48 hours after the procedure, she did not report any typical osteoid osteoma pain. She is currently free of symptoms at 4 years since the procedure.

Conclusion: Radiofrequency ablation of osteoid osteoma located in the spine is an effective procedure, but concerns about neurological thermal injury remain. Temperature monitoring of the involved neural structures may help avoiding nerve damage in selected cases. Use of modified neuroprotective techniques may be mandatory in complex cases.