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Pediatric osteoid osteoma – Treatment and follow-up

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Introduction: The osteoid osteoma is a small benign tumor, characterized by an intense pain that is worse at night. Surgical removal implies some surgical difficulties and potential complications. This motivated the emergence of new, less invasive, techniques, like the radiofrequency ablation. We reviewed the osteoid osteomas in the pediatric age treated with radiofrequency and evaluated the treatment efficacy and the patient follow-up.

Methods: We reviewed a 19 cases, 5 females and 14 males, with ages between 7 and 17 years old (mean: 13 years). The lesions were on the femur (n=12), tibia (n=2), humerus (n=2), sacrum (n=1) and lumbar vertebrae (n=2).

The diagnosis was based, in all cases, on the clinical presentation, on the CT scan and on the pinhole bone scintigraphy.

No biopsy was performed.

All patients underwent CT-guided radiofrequency ablation, under general anesthesia, in an outpatient basis.

Results: The treatment was effective in all cases, with complete and sustained resolution of the pain. There were two patients who had post-operative complications.

The mean follow up was 9 months.

No patient had a recurrence of pain after discharge.

Discussion: One of the complications was on a patient with a tibial lesion, who had a skin infection in the radiofrequency needle entry point and the other one.

The other one had a lumbar lesion, and complicated after the radiofrequency with a mild aseptic meningeal syndrome. Both cases had total resolution of symptoms after appropriate medical treatment.

On the first ten cases, on follow up, we repeated the pre-operative imaging studies 6 months after the procedure. However we concluded that in most cases there were no significant imaging changes, with persistence of the nidus on the CT scan and positive bone scintigraphy, but the patient was fully asymptomatic. So on the remaining patients we decided to have only a clinical follow up and avoid radiation exposure. When we are talking about a pediatric population, this matter becomes even more relevant.

All patients were urged to come to us if there was any recurrence of pain after the discharge. We had no record of any late recurrence.

Conclusion: Radiofrequency is and safe and effective option when treating osteoid osteomas, with excellent results and few complications. Also the follow up can be short and based solely on the clinical findings, with no need to expose the patients to unnecessary radiation.