

Minimally Invasive Excision of Osteoid Osteoma Using O-arm Navigation and Intraoperative CT.

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Background

Computer-assisted intraoperative navigation has gained popularity and has been used effectively in orthopaedic surgery. The aim of this study was to evaluate the result of minimum invasive excision of osteoid osteoma using O-arm navigation and intraoperative CT.

Patients and Methods

Three osteoid osteoma patients (2 males, 1 female) osteoid osteoma underwent excision using O-arm

navigation and intraoperative CT. The mean follow-up period was 12 months. The tumor sites were femur in 2 patients and cuboid in 1 patient. First, the reference frame was stabilized with two pins that were inserted into the bone involving the tumor percutaneously, and then an intraoperative CT using O-arm of the affected area was performed. Then, under the navigation, the nidus of the osteoid osteoma was identified and resected with a cannulated cutter or curette with a minimal skin incision. After the excision of tumor, intraoperative CT was performed to check the affected area again. We retrospectively reviewed the clinical result of the procedure.

Results

The mean operation duration was 96 minutes. All patients became completely pain free after operation. And all patient experienced no significant complications including fracture, infection or recurrence.

Conclusions

For the treatment of osteoid osteoma radiofrequency ablation (RFA) has gained favor as a more precise alternative due to potentially less bone destruction. However, in our country, RFA is not covered by medical insurance and the cost is a problem for patients. The traditional methods of treatment has been surgical excision of the nidus. However, there is a risk of incomplete excision of the nidus more bone destruction, when the nidus was difficult to detect with image intensifier. We could resected the nidus

precisely using O-arm navigation and intraoperative CT and achieve relief from pain. Furthermore, this procedures also can reduce the radiation exposure to the surgeon compared to traditional excision using an image intensifier. This minimally invasive procedure is a one of the useful option for the treatment of osteoid osteoma.

Summary

Minimally invasive excision of osteoid osteoma using O-arm navigation and intraoperative CT is a one of the useful option for the treatment of osteoid osteoma.