CASE REPORT

Osteoid Osteoma cryoablation using Micromate™

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Patient description

9-year-old female

Exhibits swelling of the right ventral tibia for a few years, reporting pain in the months prior to the intervention.

Diagnostic X-ray and CT scans suggest the existence of an osteoid osteoma.

Key Takeaway

Micromate™ allowed the clinical team to perform a successful cryoablation in a case where instrument access and alignment stability would be challenging if performed freehand.

Case Rating

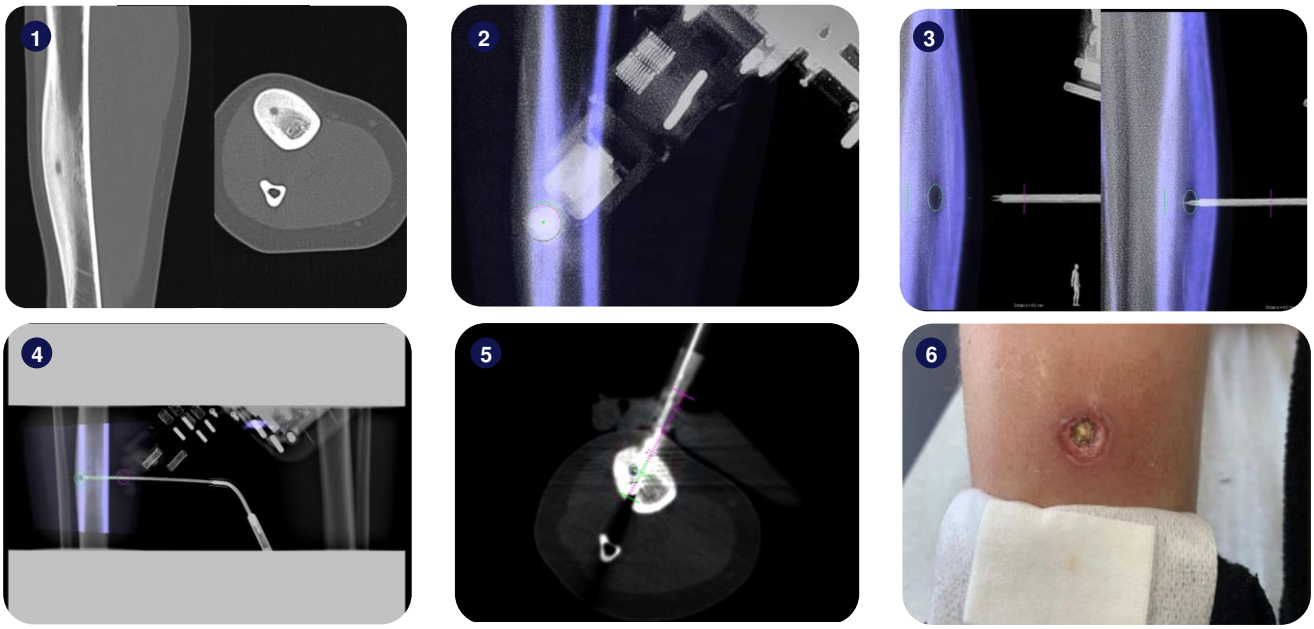
When compared with state-of-the-art freehand targeting | doi: 10.2214/AJR.09.3647. PMID: 20410392.

Radiation exposure (mSv)
1.68 mSv
87% less radiation

Procedure duration
1h12 total duration

An intra-operative 3D scan of the patient's leg was performed in supine position using a Philips Allura Xper FD20 angiography device. The suspicious lesion was segmented, and the surgical trajectory planned using the Xper Guide planning software. A target point was defined at the distal border of the segmented lesion and an intermediate target point was marked in the center of the lesion. Micromate™ was gross-positioned near the entry point and aligned to the trajectory under fluoroscopic live imaging.

After alignment, an 11G needle was advanced until the intermediate target point using a Teleflex Arrow OnControl Bone Drill System and a control scan was acquired. This allowed to create a path for the insertion of the cryoablation probe. The probe (Boston Scientific IcePearl) was advanced towards the intermediate target point. A control scan was acquired, and the probe further advanced towards the target point. Cryoablation was then performed with IcePearl at 40%. Post-operative measurements of the guidance needle final location indicated a trajectory alignment accuracy of 0.00mm on the Entry Point View, a tip location accuracy of 0,00mm in the Progress View and an angular displacement of 0.52 degrees along the trajectory in the Progress View. The physician-controlled cryoablation needle tip location accuracy was 1.30mm and the angular displacement along the trajectory was 1.21 degrees in the transversal view, and no tip location or angular inaccuracies have been detected in Progress View.



1) Diagnostic scans; 2) Alignment of Micromate™ to the surgical plan, in Entry Point View; 3) Sequence showing the advancement of the 11G needle using the OnControl Bone Drill System; 5) Advancement of the cryoablation probe in Progress View and transversal view; 6) Small skin burn due to frictional heat of the drill. Required nettoyage and suture.