

Introduction

Osteoid osteoma (OO) is a benign neoplasm of bone commonly seen in patients between 5-25 years of age. Clinical features of OO include pain and swelling at the site of the lesion, which typically improve with anti-inflammatory pain medications. Diagnosis is typically made with the combination of clinical features and imaging. Treatment of OO involves both non-operative as well as operative interventions. This case report describes the novel use of C-arm navigation technology in the removal of an OO after initial treatment resulted in neoplasm recurrence.

Case Presentation

A 7-year-old male, status post osteoid osteoma excision of the left tibia, presented to clinic with left proximal tibial pain. The patient had undergone previous unsuccessful treatments including radiofrequency ablation 15 months prior, and open surgical excision and curettage 3 months prior, both resulting in recurrence of the pain. CT imaging revealed a cortically based lesion with a nidus in the proximal left tibia indicative of recurrence of the OO.

Figure 1. (Below-Left) Lateral X-ray of the left knee showing a lucency in the proximal tibia after resection and curettage at 4 weeks with reactive healing.



Figure 2. (Below-Right) Axial CT-scan of the left tibia showing a cortical lesion involving the posterolateral aspect of the left tibia.

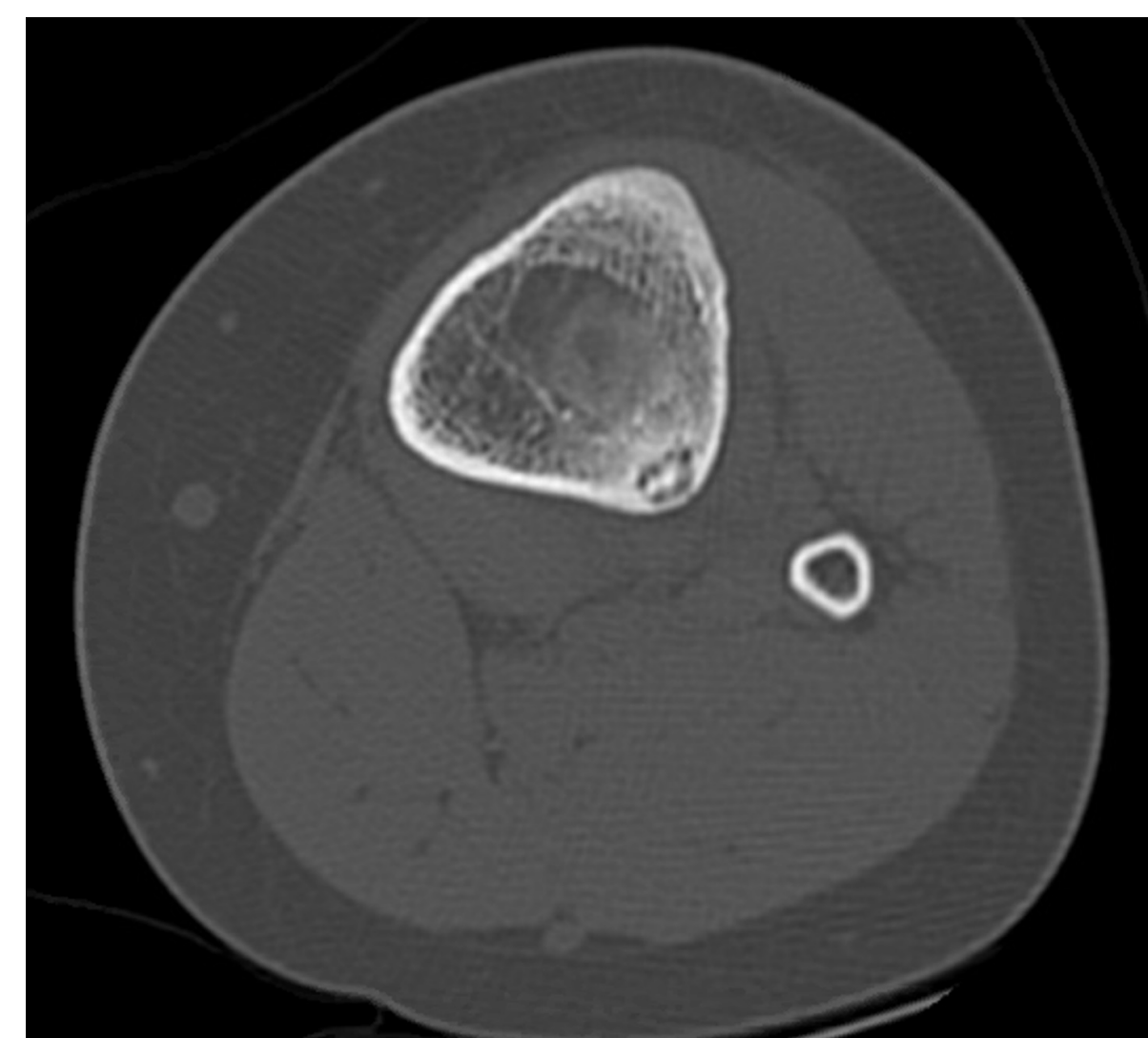
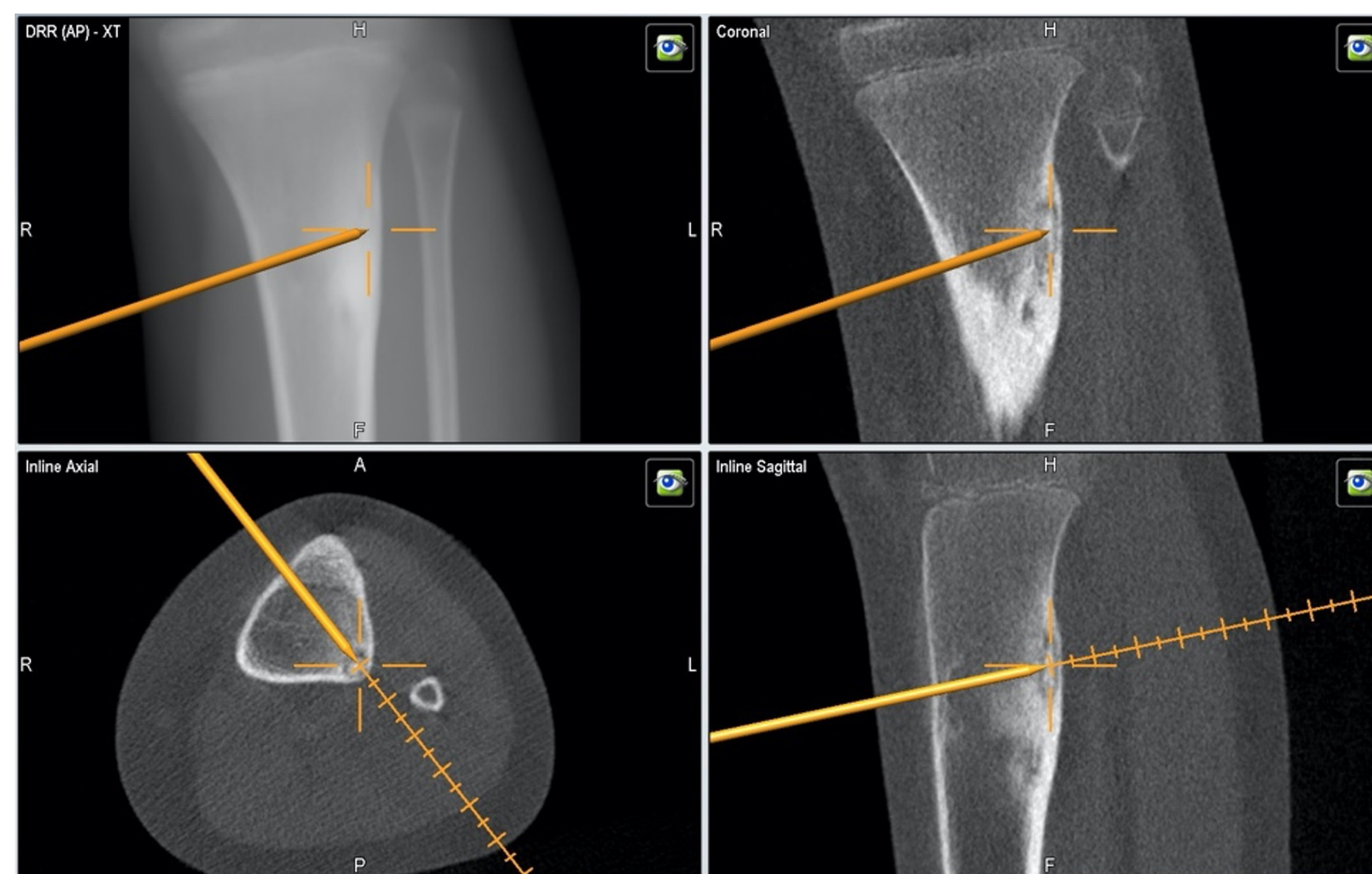


Figure 3. (Below) Intra-operative imaging using the Ziehm for navigation.



Surgery and Recovery

The patient underwent open excision of the lesion with the use of intraoperative 3D C-Arm with navigation. The patient is now 9 months post excision without tibial pain or recurrence.

Discussion

Operative treatments for OO vary based on the type of imaging (CT or C-arm guided) used intraoperatively and the planned surgical approach (radiofrequency ablation or open excision). The primary factor in reducing the risk of recurrence of the lesion is complete removal or destruction of the nidus. 3D C-arm technology with navigation has lower radiation doses than standard CT-scans, projects a 3-dimensional high-quality image, and has the option of navigation to ensure the location and successful removal of the entire nidus.

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