

Clinical Case Study.

Point-of-Care Imaging Distal Radial and Ulnar Styloid Fracture

The Adaptix Ortho350 is a cutting edge, portable Digital Tomosynthesis (DT) system offering high-resolution, low-dose 2D and 3D imaging for musculoskeletal diagnostics. It uses a low-dose source that emits X-ray from an array of positions and similar to CT, reconstructs image stacks for clearer visualization of our complex joint structures.



Point-of-Care Imaging Distal Radial and Ulnar Styloid Fracture

Clinical Setting | Orthopedic Surgery Center Miami, Florida

PATIENT PRESENTATION

Standard 2D



PA

Lateral

A 70-year-old male presented with severe wrist pain and reduced range of motion following a fall onto a flexed hand. Initial post-immobilization plain radiographs were suboptimal and insufficient for definitive assessment

Imaging Challenge

Complex wrist fractures can be difficult to adequately assess on plain radiographs after immobilization in a cast.

The cast material can obscure fine bony detail and compromise visualization of cortical margins, thereby reducing diagnostic confidence. Assessment of fracture displacement, particularly on the lateral view, is especially vulnerable to cast-related attenuation, as this projection is often most degraded by overlying anatomy.

When clinical concern for displacement or articular incongruity remains despite limited radiographic visualization, patients are often referred to cross-sectional imaging such as CT, contributing to increased cost, delayed confirmation of alignment, and additional resource utilization

Adaptix Ortho350 Imaging

The patient underwent a low-dose 3D tomosynthesis scan using Adaptix Ortho350 at the point of care. The system produced multi-slice images of the wrist, enabling visualization of cortical and trabecular bone structures.

Adaptix 3D



Slice 37

Slice 47

As we progress from Slice 37 to Slice 47, we are viewing the stack from anterior to posterior

Adaptix 3D



Slice 14

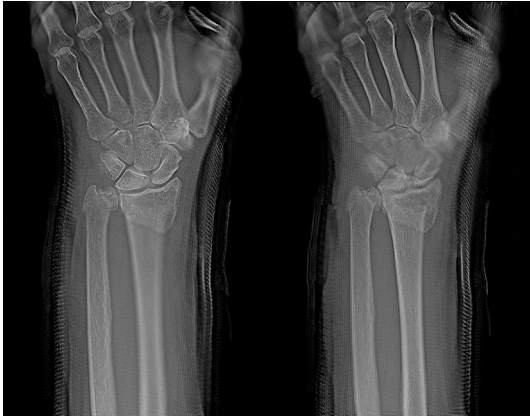
Slice 18

Slice 22

Slice 26

*As we progress from Slice 14 to Slice 26, we are viewing the stack from medial to lateral

KEY FINDINGS

Adaptix 3D

*As we progress from Slice 37 to Slice 47, we are viewing the stack from anterior to posterior

The Adaptix Ortho350 scan clearly demonstrated a distal radius fracture with volar displacement along with an associated ulnar styloid fracture following cast immobilization, findings that were difficult to visualize on the initial radiographs. Tomosynthesis improves fracture detection by generating multiple sectional images that reduce anatomical overlap.

Clinical Impact

- Immediate clinical plan at point of care
- Avoided referral for CT/MRI
- Reduced patient pathway delay

Digital tomosynthesis has been shown to improve fracture detection compared with standard radiography and can reduce the need for advanced imaging in many cases.

Operational impact for the facility

- Faster orthopedic decision-making
- Reduced CT/MRI demand
- Imaging performed directly within the MSK clinic

Outcome

The patient was treated with immobilization and orthopedic follow-up, avoiding additional imaging and enabling same-day diagnosis and care planning.