Multiple ankle fracture

Multitom Rax Real3D[1] clinical case
University of Utah, United States of America



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1 Option

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Clinical background and indication for Multitom Rax Real3D[1] examination

Patient

Sex	Age	BMI
Male	20–25 years	20–25 kg/m²

Anamnesis

Patient reports having a fall while snowboarding. The lateral radiograph reveals a nondisplaced talonavicular capsular avulsion which is hard to appreciate (arrow), compatible with plantarflexion injury. A calcaneonavicular coalition is present (circle).

Indication for Real3D[1] examination

Assessment of ankle because of lateral malleolus pain.



Conventional X-ray examination



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Multitom Rax RealI3D[1]
Settings



Settings for table scan
with High Quality Protocol

Tube voltage	81 kV
Current time product	182 mAs
Dose area product	871.8 µGy·m²
Calculated value for $CTDI_{vol,16}$	11.5 mGy
Scan time	16 sec
Number of projections	434

Reconstruction settings
for sectional views

Pixel size	0.4 mm
Reconstruction kernel	sharp
Slice thickness	0.5 mm

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Multitom Rax RealD[1]
Diagnostic findings



Sagittal view MPR
Slice thickness 0.5 mm



Sagittal view MPR
Slice thickness 1.0 mm

Nondisplaced fracture at the lateral aspect of the navicular, adjacent to a calcaneonavicular coalition. Mild talar beaking. Ankle mortise is symmetric. No joint effusion. Normal osseous mineralization.

Sagittal MPR images confirm the dorsal talar avulsive-type fracture (left image), but also demonstrate small fracture fragments of the dorsal lateral navicular and ant process of calcaneus (right image) which were not seen on XR.

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“Learning points for this clinical case:

- High-quality images of fingers obtained
- Real3D enabled the radiologist to:
  - Visualize the fracture seen on X-ray images
  - Additionally visualize fracture fragments not seen on X-ray images”[1]

1 The statements by Siemens Healthineers customers described herein are based on results that were achieved in the customer’s unique setting. Since there is no “typical” hospital and many variables exist (e.g. hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

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Real3D is an option.

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Frederic Noo, PhD is employed by an institution that receives financial support from Siemens Healthineers for collaborations.

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