Department of Radiology Techniques
The Second Stage

Foot

Lecture 7

Assist. Lecturer

Tariq Nadhim Jassim

Fadhil Aad Leftah Al-zurfi

Basic Positions of Foot

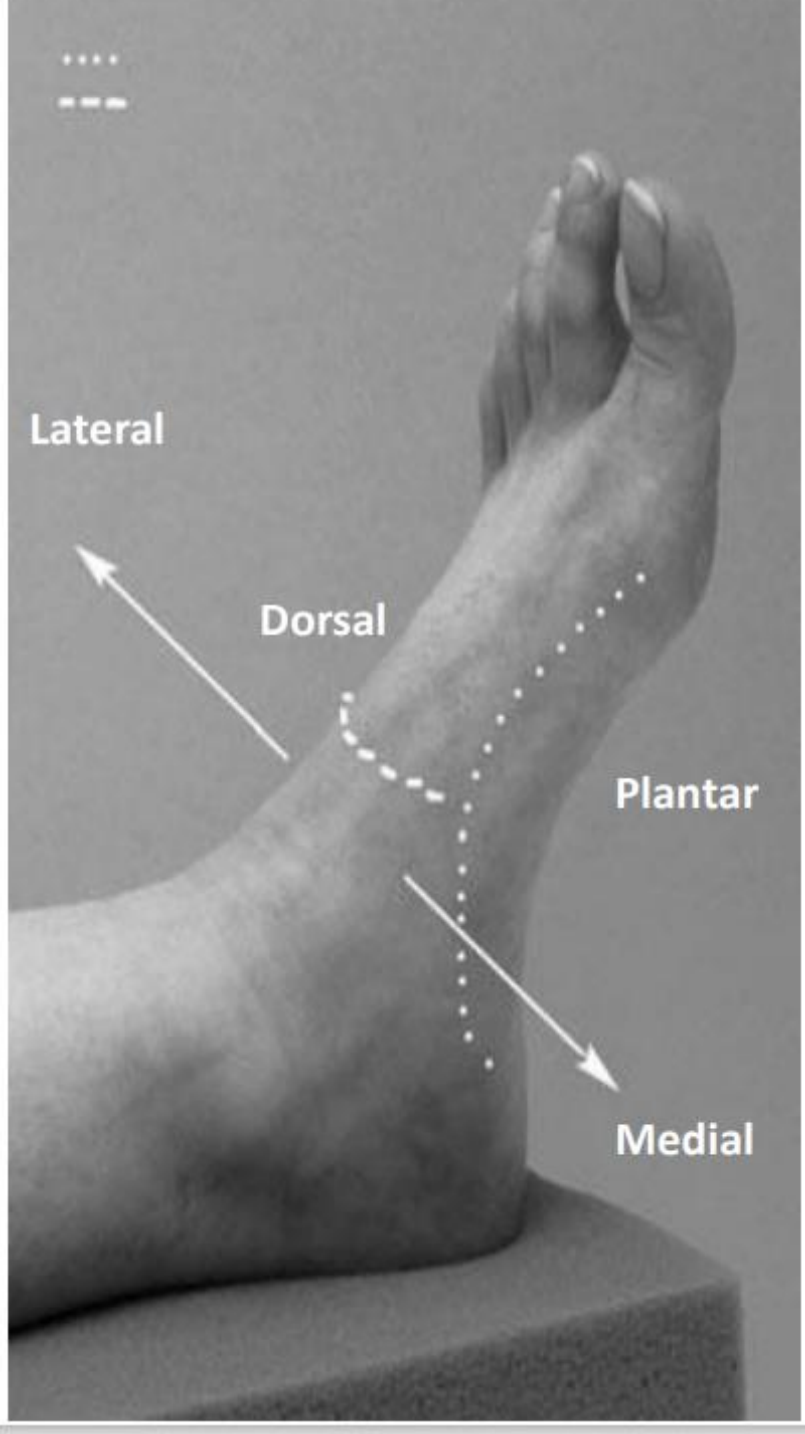
1- Anterior – Posterior (Dorsi-plantar)

2- Oblique

3- Lateral

Cassette out – Bucky (12x10 Inch)


Distal Phalanges
R
wiki
Interphalangeal Joint
Proximal Phalanges (1-5)
Metatarso-phalangeal Joints
Sesamoid Bones
Metatarsals (I-V)
Cuneiforms
- Medial
- Intermediate
- Lateral
Navicular
Talus
Tibia
A
B
C
D
1
2
3
4
5
I
II
III
IV
V
Intermediate Phalanges (A-D)
Head of 5th Metatarsal
Shaft of 5th Metatarsal
Base of 5th Metatarsal
Cuboid
Calcaneum
Fibula


Lateral
Dorsal
Plantar
Medial

1- Anterior – Posterior

Position of Patient

• The patient is seated on the X-ray table, supported if necessary with the affected and hip , knee flexed on the same affected side.

• The plantar aspect of the affected foot is placed on the cassette out Bucky and the lower leg is supported in the vertical position by the other knee .

• size of cassette 24 × 30 cm(10 × 12).

Direction and centering of the X-ray beam

• The central ray is directed to metatarsals, The X-ray tube is angled 10° or 15 degrees cranially (toward heel), centered to base of third metatarsal.

Essential image characteristics

• The tarsal and tarso-metatarsal joints should be demonstrated when whole foot is examined.

• The kVp selected should reduce the difference in subject contrast between the thickness of

the toes and the tarsus to give uniform radiographic contrast over the range of foot densities.

Fig. 4.12 AP foot, CR 10° posteriorly.

Normal dorsi-plantar radiograph of foot

2- Oblique

Position of Patient

• From the basic dorsi-plantar position, the affected limb is allowed to lean medially to bring the plantar surface of the foot approximately 30–45 degrees to the cassette.

• A non-opaque angled pad is placed under the foot to maintain the position, with the opposite limb acting as a support

Direction and centering of the X-ray beam

• The vertical central ray is directed over the cuboid-navicular joint.

Image Characteristics

- The kVp selected should reduce the difference in subject contrast between the thickness of the toes and the tarsus to give a uniform radiographic contrast over the range of foot densities.
- A wedge filter may also be used to give a uniform range of densities.
- The dorsi-plantar oblique should demonstrate the inter-tarsal and torso-metatarsal joints.

Normal dorsi-plantar oblique radiograph of foot

Radiographs showing normal fifth metatarsal ossification centre on the left, and fracture base fifth metatarsal on right (arrow)

3- Lateral

This is used in addition to the routine dorsi-planter projection to locate a foreign body. It may also be used to demonstrate a fracture or dislocation of the tarsal bones, or base of metatarsal fractures or dislocation.

Position of Patient

• From the dorsi-plantar position, the leg is rotated outwards to bring the lateral aspect of the foot in contact with the cassette.

• A pad is placed under the knee for support.

• The position of the foot is adjusted slightly to bring the plantar aspect perpendicular to the cassette.

Direction and centering of the X-ray beam

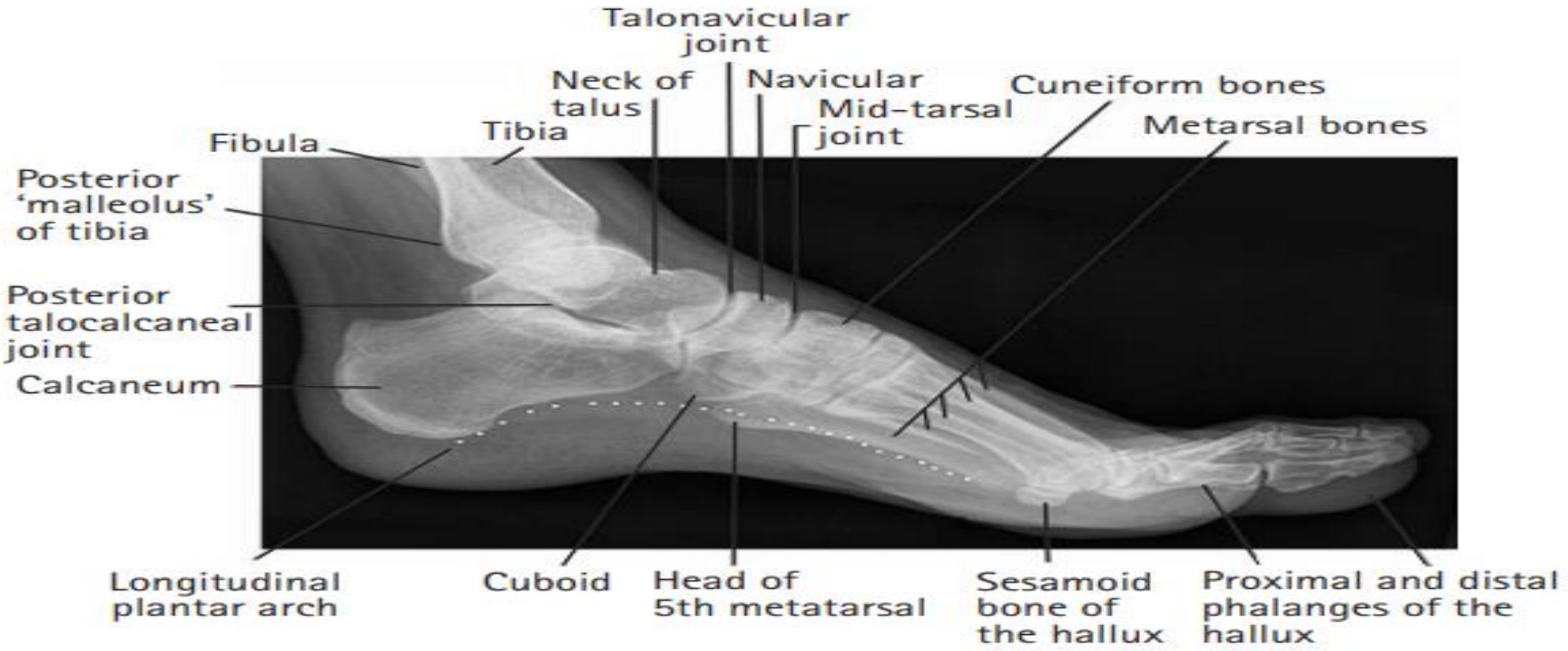
• The vertical central ray is centered over the navicular cuneiform joint.

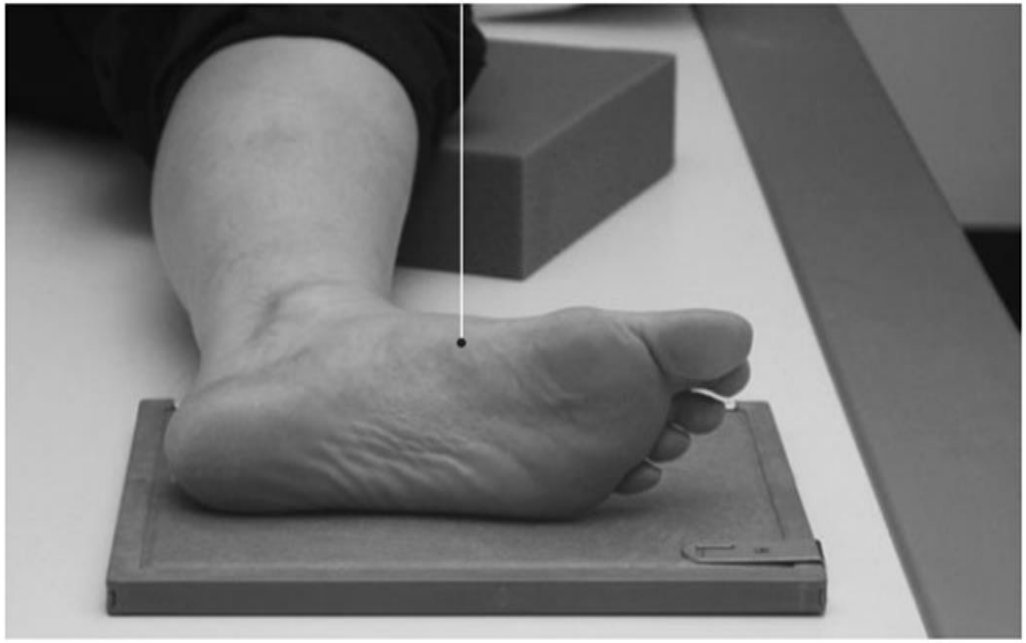
Image Characteristics

• If examining for a suspected foreign body, the kVp selected should be adequate to show the foreign body against the soft -tissue structures.

Note

A metal marker placed over the puncture site is commonly used to aid localization of the foreign body.





Lateral radiograph of foot showing metallic foreign body

Normal lateral radiograph of foot


Thanks