**Table 1. The standard protocol for ankle joint radiography**

|  |  |
| --- | --- |
| **Plane** | **Aim** |
| Frontal | Plain assessment of the joint bones and their configuration in the neutral foot position, assessment of the medial and lateral malleolus fractures, distal calf parts, and ankle bone. Measurement of the ankle angle |
| Lateral | Assessment of fractures of the calcaneus, talus neck, metatarsal bones, including the base of metatarsal bone V, assessment of intra-articular exudate. Measurement of the Bohler and Gissane angles |
| Frontal with internal foot rotation by 20° | Search for the tibial dome fractures, fractures of medial and lateral malleolus, ankle bone dome, and base of the metatarsal bone V. Measurement of the free tibiofibular space and tibiofibular overlap |

**Table 2. Additional ankle radiography planes**

|  |  |
| --- | --- |
| **Plane** | **Aim** |
| Oblique | Assessment of fractures of the bones of the Lisfranc joint, talus, tubercle of calcaneus, cube bone, visualization of tarsal sinus |
| Anterior to posterior stress radiography | Assessment of possible ligament injury |
| Harris-Beath | Assessment of calcaneus fractures |
| Tangential by Broden | Assessment of fractures of the bones of the subtalar joint, talus and calcaneus processes |

**Table 3. The ankle and metatarsus scanning parameters (ESSR, 2016)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Mode** | **FOV, cm** | **Matrix size** | **Slice thickness, mm** | **Scanning plane** |
| STIR | 18 | 320 × 228 | 3.0 | SAG |
| Т1 | 18 | 320 × 272 | 3.0 | SAG |
| FS Int | 16 | 256 × 230 | 3.0 | COR |
| Т1 | 16 | 256 × 230 | 3.0 | COR |
| PD | 16 | 256 × 218 | 3.0 | AX |
| FS Int | 16 | 256 × 218 | 3.0 | AX |

AX, axial; COR, coronal; FOV, field of view; FS Int, fat suppression mode with long TR and TE between conventional PD (for example, TE = 10–20) and conventional T2 (for example, TE = 80–100); PD, proton density; SAG, sagittal; STIR, short TI inversion recovery

**Table 4. The choice of radiation diagnostic method in the presence of positive criteria of Ottawa Ankle Rules. Primary method of radiation diagnostics**

|  |  |
| --- | --- |
| **Radiation diagnostic method** | **Clinical use** |
| Radiography | Recommended |
| Ultrasound | Not recommended |
| MRI | Not recommended |
| CT | Not recommended |
| Contrast-enhanced CT | Not recommended |
| Contrast-enhanced MRI | Not recommended |

CT, computed tomography; MRI, magnetic resonance imaging

**Table 5. The choice of radiation diagnostic method in the presence of positive criteria of Ottawa Ankle Rules. Primary radiography without traumatic abnormalities in the bones. Additional assessment method**

|  |  |
| --- | --- |
| **Radiation diagnostic method** | **Clinical use** |
| CT | Recommended |
| MRI | Recommended |
| Ultrasound | Not recommended |
| Contrast-enhanced CT | Not recommended |
| Contrast-enhanced MRI | Not recommended |

CT, computed tomography; MRI, magnetic resonance imaging

**Table 6. The choice of radiation diagnostic method in the presence of negative criteria of Ottawa Ankle Rules. Suggested isolated injury of the ligaments. Primary method of radiation diagnostics**

|  |  |
| --- | --- |
| **Radiation diagnostic method** | **Clinical use** |
| MRI | Recommended |
| Ultrasound | Possible use |
| Stress radiography | Possible use |
| Contrast-enhanced CT | Not recommended |
| Contrast-enhanced MRI | Not recommended |

CT, computed tomography; MRI, magnetic resonance imaging

**Table 7. The choice of radiation diagnostic method in the presence of negative or doubtful criteria of Ottawa Ankle Rules. Suggested injury of the distal tibiofibular syndesmosis. Additional assessment method**

|  |  |
| --- | --- |
| **Radiation diagnostic method** | **Clinical use** |
| CT | Recommended |
| MRI | Recommended |
| Stress radiography | Possible use |
| Ultrasound | Not recommended |
| Contrast-enhanced CT | Not recommended |
| Contrast-enhanced MRI | Not recommended |

CT, computed tomography; MRI, magnetic resonance imaging

**Table 8. The choice of radiation diagnostic method in the presence of positive criteria of Ottawa Ankle Rules. A high energy injury. Additional assessment method**

|  |  |
| --- | --- |
| **Radiation diagnostic method** | **Clinical use** |
| CT | Recommended |
| MRI | Not recommended |
| Stress radiography | Not recommended |
| Ultrasound | Not recommended |
| Contrast-enhanced CT | Not recommended |
| Contrast-enhanced MRI | Not recommended |

CT, computed tomography; MRI, magnetic resonance imaging

**Table 9. The choice of radiation diagnostic method in the presence of positive criteria of Ottawa Ankle Rules. At X-ray, there is a fracture without significant fragment displacement, including avulsion fractures. Additional assessment methods**

|  |  |
| --- | --- |
| **Radiation diagnostic method** | **Clinical use** |
| CT | Not recommended |
| MRI | Not recommended |
| Stress radiography | Not recommended |
| Ultrasound | Not recommended |
| Contrast-enhanced CT | Not recommended |
| Contrast-enhanced MRI | Not recommended |

CT, computed tomography; MRI, magnetic resonance imaging