**Adequacy of ankle radiographs in trauma**

**Descriptor:**

An audit of the adequacy of AP (mortise view) and lateral ankle radiographs in an A&E setting.

**Background:**

Ankle injury is one of the most common presentations to A&E, accounting for a considerable proportion of Emergency Department (ED) reporting work. Radiological diagnosis relies heavily on the quality & adequacy of radiographs. This is of paramount importance as suboptimal ankle radiography can lead to false diagnosis and therefore incorrect management. In a trauma setting, AP and lateral ankle radiographs are performed in almost all centres in the UK. This audit aims to assess the adequacy of AP (mortise view) and lateral ankle radiographs.

## The Cycle

**The standard:**

The medial and lateral malleoli should be equidistant from the detector in a standard AP (mortise view) ankle radiograph, ensuring a clear joint space. The AP view should also include the lower third of leg, and the beam centred midway between malleoli [1]. The lateral ankle radiograph should include the lower third of tibia and fibula, talus, base of 5th metatarsal and calcaneum. It is also essential to show general bone and joint space alignment and the X ray beam should be centred over the medial malleolus [1,2, 3]. These principles have been used as the ‘gold standard’ of the audit.

**Target:**

90% of AP (mortise view) and lateral ankle radiographs should be adequate.

## Assess local practice

**Indicators:**

Assessment of the AP (mortise view) and lateral ankle radiograph for adequacy is to be performed by 2 senior radiographers and 2 radiologists (in order to compare consistency) familiar with the standard technique.

**Data items to be collected:**

- Unique patient identifier

- Assessment and record of adequacy:

   • AP (mortise view) - optimal display of ankle joint space, mortise, medial and lateral malleoli and lower third of tibia and fibula

   • Lateral view - optimal display of the whole of navicular, the 5th metatarsal base, lower third of tibia and fibula as well as talus profile and ankle joint space to assess for rotation

**Suggested number:**

- 100 patients

- Strict exclusion criteria to be applied:

   • Exclude children < 12 years

   • Evidence of previous surgery

   • Patients in casts

   • Calcaneal and weight bearing films

**Suggestions for change if target not met:**

• Formal education with regard to good technique

• Posters displaying details of technique and adequate image parameters to be displayed in viewing areas

• Guidance on repeating radiographs if inadequate technique demonstrated

• Repetition of the audit process to maintain standards

**Resources:**

- Time for data collection

- PACS manager to facilitate case identification

- Audit Report writing

**References:**

1. Clark, K.C. (2015). Positioning in radiography. 13th ed. P136.
2. Rogers, L.F. (1992). Radiology of Skeletal Trauma. (2nd ed) Volume 2. P 1325.
3. Radiopaedia Ankle  <https://radiopaedia.org/articles/ankle-lateral-view-2?lang=gb>

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