AIIS Morphologic Classification: Evaluation of the Accuracy of Plain Radiographs

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Femoroacetabular impingement (FAI) is a common cause of hip pain.

AIIS has been described as a source of extra-articular hip impingement.

Typically located at the 1:30-2:00 o’clock position (common region for labral tears).
• Classification of AIS morphology proposed by Hetstroni et al.
PURPOSE

• To assess the utility of plain radiographs in classifying AIIS morphology using the previously described CT classification system.
METHODS

• Single surgeon case list review for hip arthroscopy FAI cases.

• Patients with 3D CT and 3 view plain radiographs (AP pelvis, Dunn 45 lateral, false profile) included

• CT used as gold standard for AIIS type

• 6 blinded reviewers – 2 randomized attempts at classification
  • 3 attending orthopaedic surgeons
  • 3 orthopaedic residents
LIMITATIONS

- Patients without CT excluded from study (selection bias?)
- Single reviewer for images.
- Only patients selected for hip arthroscopy included – more arthritic patients who were not selected for arthroscopy may have higher frequency fragments.
- Decision for labral repair vs debridement based on single surgeon’s judgement of labral tissue quality.
RESULTS

- 76 patients included
- CT classification:
  - Type 1: 26/76 (34.2%)
  - Type 2: 49/76 (64.5%)
  - Type 3: 1/76 (1.3%)
RESULTS

- Attending Surgeons correctly classified AIIS  
  52% of attempts vs residents classified correctly  
  53% of attempts

- All reviewers: 1\textsuperscript{st} attempt classified correctly  
  54%; 2\textsuperscript{nd} attempt correctly classified 51%

- Type I correctly classified 42% of attempts; Type  
  II correctly classified 58% attempts (p<0.0001)
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• Only patients selected for hip arthroscopy included – more arthritic patients who were not selected for arthroscopy may have higher frequency fragments.

• Decision for labral repair vs debridement based on single surgeon’s judgement of labral tissue quality.
• Standard 3 view plain radiographs not as reliable as CT for classifying AIIS morphology

• Attending surgeons and resident surgeons similarly inaccurate in classifications

• Type II AIIS more readily correctly classified than type 1

