

Diagnosis and Treatment of First Metatarsophalangeal Joint Disorders.

Section 4: Sesamoid Disorders

Clinical Practice Guideline First Metatarsophalangeal Joint Disorders Panel:
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This clinical practice guideline (CPG) is based upon consensus of current clinical practice and review of the clinical literature. The guideline was developed by the Clinical Practice Guideline First Metatarsophalangeal (MTP) Joint Disorders Panel of the American College of Foot and Ankle Surgeons. The guideline and references annotate each node of the corresponding pathways.

Sesamoid Disorders (Pathway 5)

Disorders of the sesamoid complex are not uncommon and are associated with many aspects of first MTP joint pathology (1–4).

Significant History (Node 1)

Patients vary in age from adolescents to adults and may present with a history of trauma, although the onset of symptoms may be insidious. This may be an isolated problem or it may be associated with other first MTP joint pathology (1,2,4–8).

Significant Findings (Node 2)

Clinical examination may show swelling, discoloration or joint effusion, or may disclose none of these and appear relatively benign. Pain may occur on compression of either sesamoid, with passive range of motion of the joint and/or during ambulation.

Radiographic Examination (Node 3)

Positive radiographic findings may include:

- Fracture of 1 or both of the sesamoids (5,9,10) (Fig. 1)
- Partition (sesamoid multipartite) (11)
- Avascular necrosis (6,12) (Fig.)
- Arthritic changes of the sesamoid (13) (Fig. 3)
- Localized soft tissue swelling

If clinical examination and radiographs allow for definitive diagnosis, treatment should be directed accordingly. Nondisplaced or mildly displaced fractures, symptomatic partitions, and avascular necrosis may be initially treated with immobilization and offloading techniques. If these measures fail, or if a markedly displaced fracture is encountered, excision of the affected sesamoid(s) may be indicated. Degenerative/arthritic changes may be treated with offloading techniques, orthotics, anti-inflammatory nonsteroidal drugs, or localized injection. Surgery may be indicated if nonsurgical care is unsuccessful (2,14). Excision of a sesamoid(s) may result in a variety of postoperative problems including hallux varus, valgus, hammertoe, and/or extensus; the patient must be evaluated carefully (15).

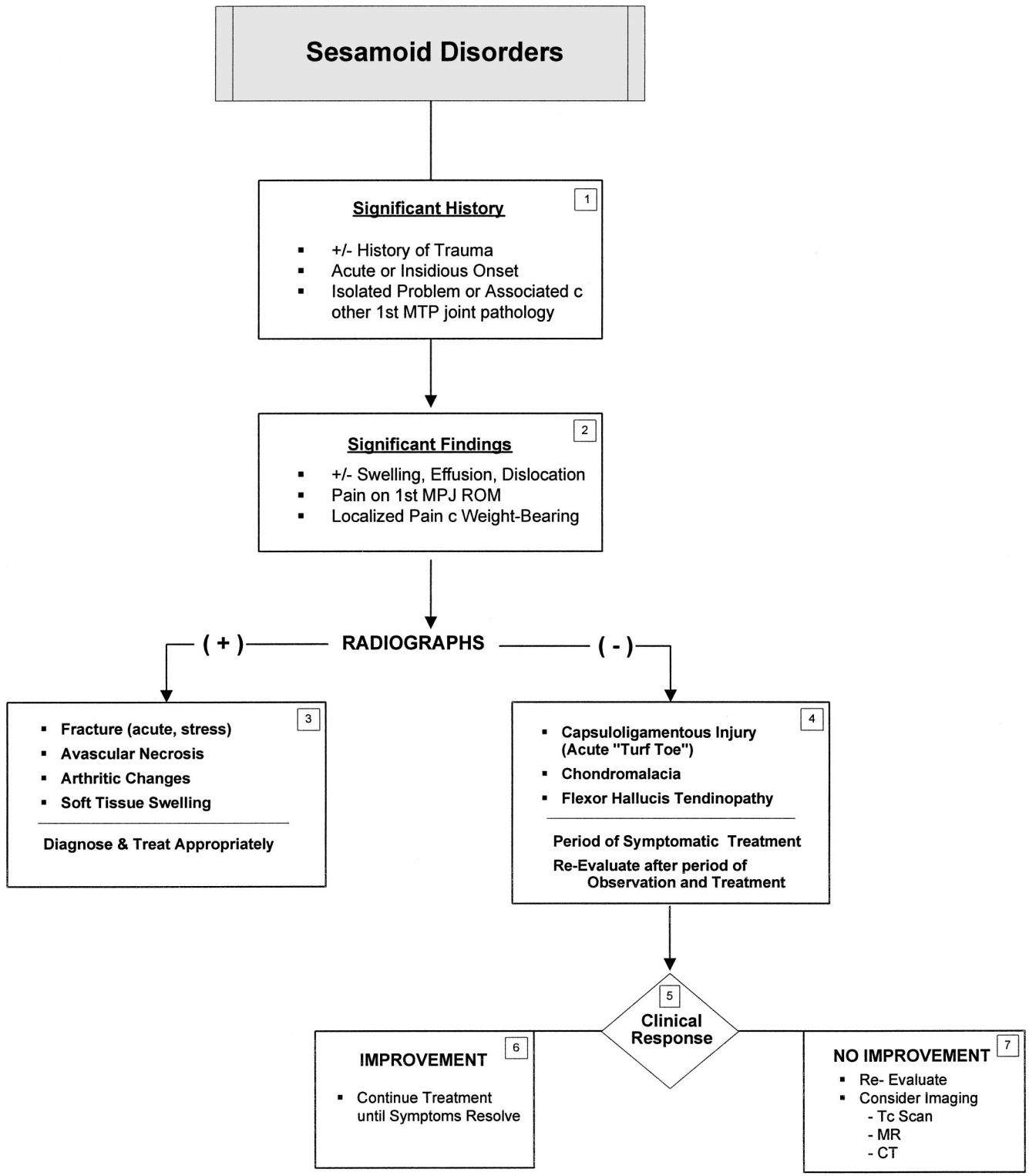
Negative or Normal Radiographic Examination (Node 4)

If initial radiographic examination is negative for osseous pathology, soft tissue and cartilaginous disorders may be considered. These diagnoses include flexor hallucis tendinosis or rupture, capsuloligamentous injury (acute turf toe), and chondromalacia. A period of treatment including orthoses, physical therapy, anti-inflammatory nonsteroidal drugs, and possible injection may be considered.

Reevaluation (Node 5) is indicated after an appropriate time interval. If improvement is noted (Node 6), treatment is continued until resolution of symptoms. If an inadequate response to treatment is found (Node 7), further diagnostic imaging including technetium scan, magnetic resonance

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Pathway 5



FIGURE 1 Fracture of the tibial sesamoid fracture in (A) anteroposterior and (B) oblique radiographs. Fracture of both sesamoids may occur and is seen in (C) anteroposterior and (D) oblique radiographs from a young patient post trauma.

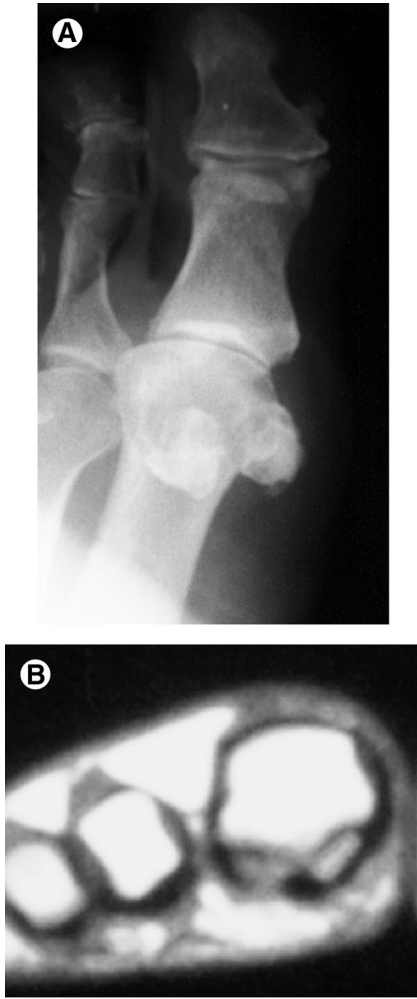


FIGURE 2 Avascular necrosis of the sesamoids may occur with irregularity as shown on the (A) oblique radiograph and the (B) loss of signal on magnetic resonance imaging.

imaging, and computed tomography is indicated to rule out other pathology not shown by plain radiography (6,16–18).

Summary

Sesamoid disorders are not uncommon and are associated with variety of pathologies with various treatment options available.

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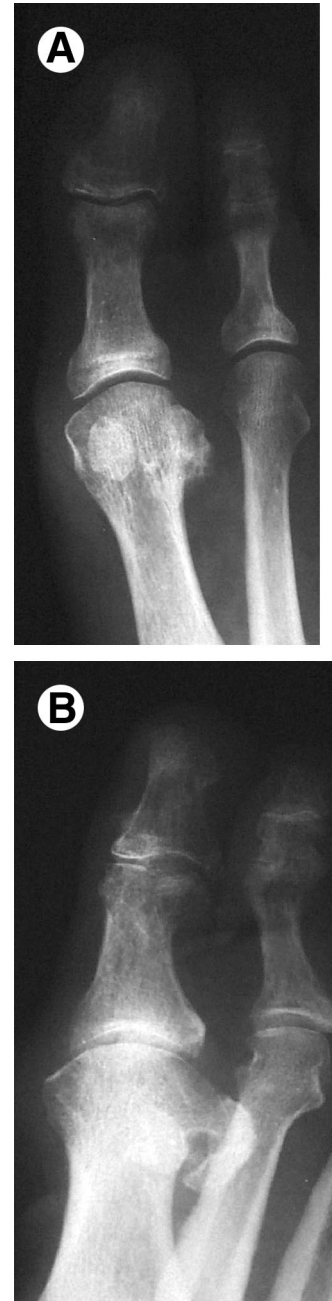


FIGURE 3 Degenerative joint disease at the level of the sesamoids may be problematic, and these radiographs show involvement of the fibular sesamoid.

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