The Painful Accessory Navicular

Round Table of Foot and Ankle Surgery 2026
The Forefoot and Midfoot Revisited

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Clinical question: when is the accessory navicular a benign anatomical variant, and when is it the pain generator?

1. Why this matters

Common finding, uncommon disabling pain: the clinical task is attribution.

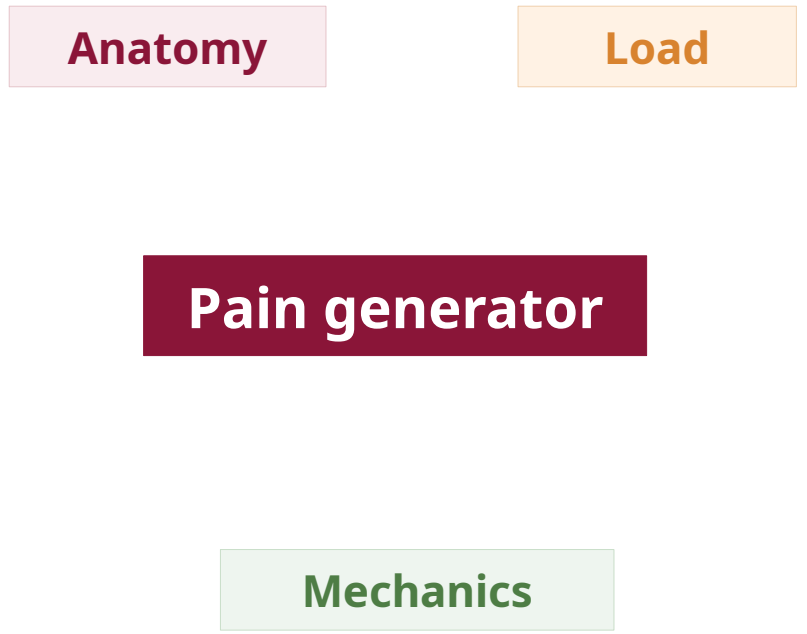
The accessory navicular is common. Most are incidental. Symptoms emerge when local anatomy, load, footwear and foot mechanics align.

Do not overdiagnose
Medial foot pain has many causes. Treat the accessory navicular only when history, examination and imaging point to it.

Do not undertreat mechanics
Pain is often a tendon and foot relationship, not simply a small ossicle in isolation.

The key lesion
Type II synchondrosis is the classic active pain interface, particularly in adolescents and athletes.

The key pitfall
Persistent pain after surgery often reflects missed planovalgus, hindfoot valgus or PTT dysfunction.

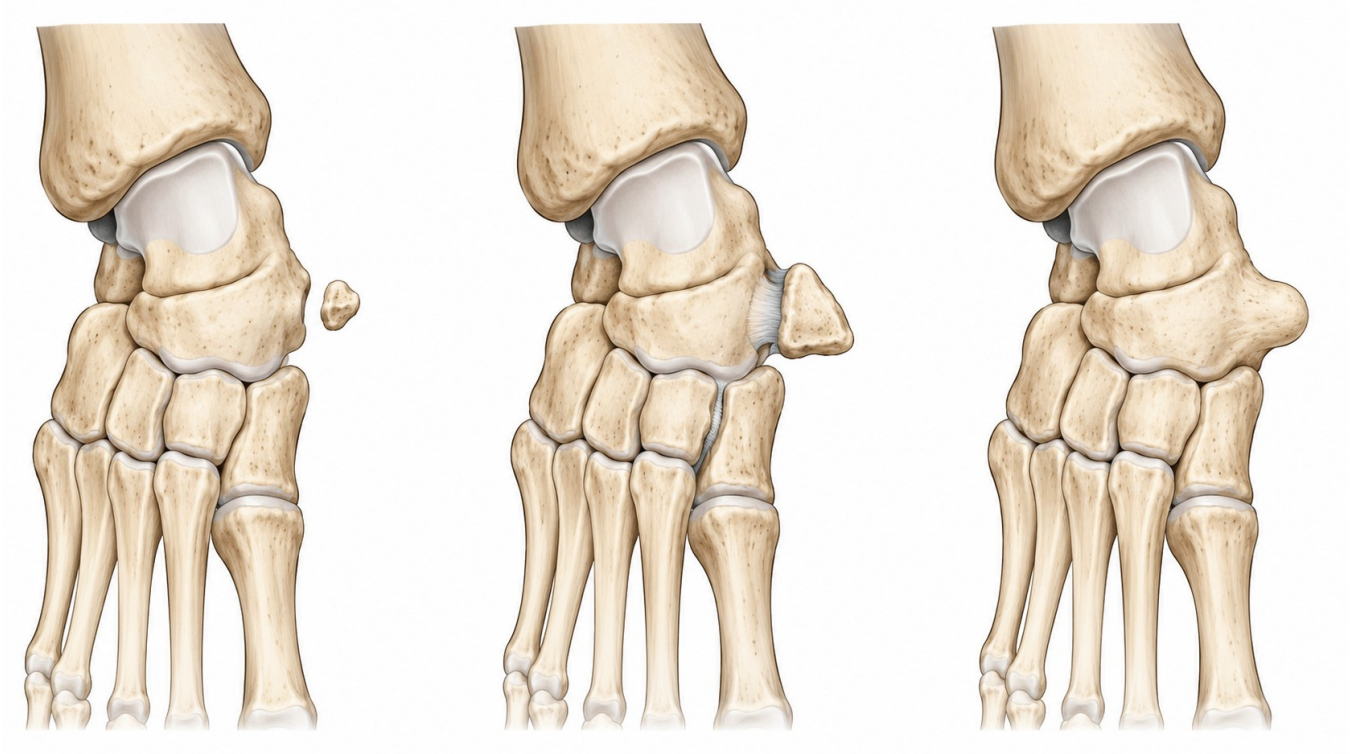


The talk framework: localise pain, prove activity, control mechanics, then tailor surgery.

Refs: [2,6,8,9,15]

2. Anatomy and classification

The accessory navicular sits in the biomechanical territory of the posterior tibial tendon.



Type I
Small sesamoid like ossicle within the distal posterior tibial tendon. Usually incidental.

Type II
Larger ossicle joined to the navicular by a fibrocartilaginous synchondrosis. Most clinically relevant.

Type III
Fused or cornuate navicular tuberosity. Symptoms usually relate to prominence and shoe pressure.

Key point

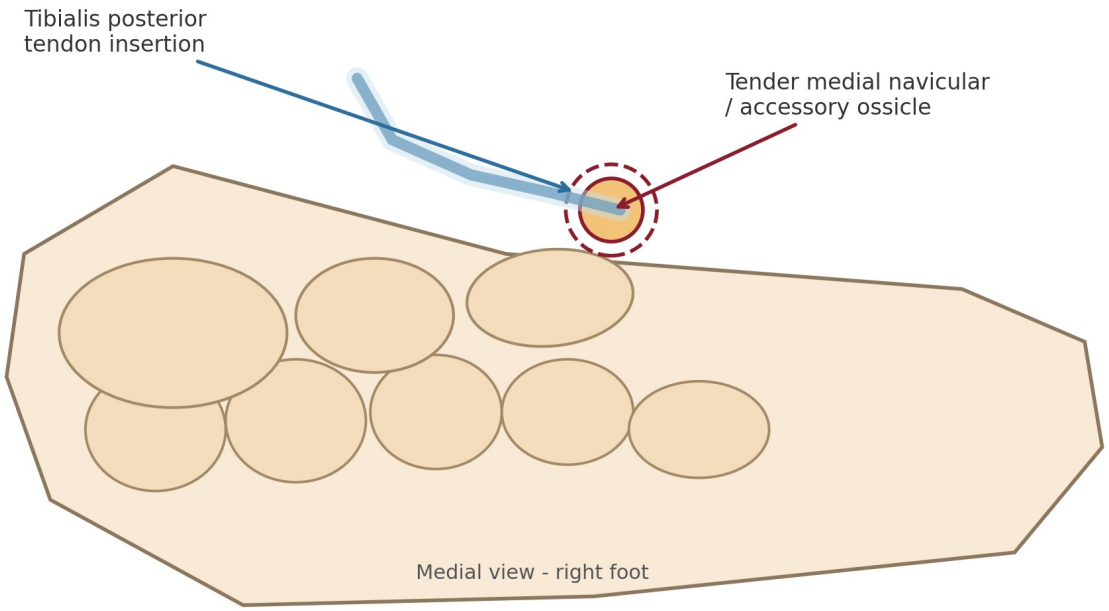
The radiographic type matters less than tenderness, oedema, footwear conflict and associated planovalgus or PTT dysfunction.

PTT: posterior tibial tendon

Refs: [1,2,6,15]

3. Why does it hurt?

Pain is generated by synchondrosis stress, tendon traction, pressure and foot mechanics.



1 **Synchondrosis stress**

The fibrocartilaginous interface behaves like a stress site under tension, shear and compression.

2 **Posterior tibial tendon traction**

Altered insertion can increase traction through the medial column and reproduce pain on resisted inversion.

3 **Prominence and footwear conflict**

A medial bump can cause pressure, bursitis, redness, blistering and focal tenderness.

4 **Planovalgus load**

Hindfoot valgus and medial column collapse increase demand on the PTT and spring ligament complex.

Clinical trap

Do not label every accessory navicular as the diagnosis. Localise pain and reproduce it with load, footwear pressure or resisted PTT testing.

Refs: [2,3,6,7,15]

4. Clinical assessment

A short examination should classify the patient, not just the ossicle.

History
Adolescent or young adult. Medial midfoot pain. Worse with sport, long walking, stairs or narrow footwear. Ask about a traumatic trigger.

Look
Medial prominence, callus, bursitis or skin irritation. Assess arch height, hindfoot valgus and forefoot abduction.

Palpate
Maximal tenderness at the navicular tuberosity or synchondrosis. Compare PTT course, spring ligament and plantar fascia.

Function
Resisted inversion and plantarflexion. Single leg heel raise. Toe rise pain. Footwear tolerance and work or sport limitation.

Five discriminators before offering surgery

1. **Point tenderness**
   Directly over the accessory navicular or synchondrosis.
2. **Reproducibility**
   Symptoms reproduced by shoe conflict, toe rise or resisted PTT testing.
3. **Anatomical correlation**
   Type II or III morphology matches the clinical pain map.
4. **Active lesion**
   MRI oedema or uptake supports the pain generator when uncertain.
5. **Mechanical context**
   Planovalgus, hindfoot valgus and medial column instability are assessed and treated if relevant.

Operative success depends on matching the operation to the pain map and the mechanical driver.

Refs: [6,7,12,15]

5. Imaging: prove the pain generator

Plain films define anatomy; MRI defines biological activity.



Radiographs
Weight bearing AP, lateral and oblique views. Look for Type II synchondrosis, prominence, talonavicular coverage and pes planus.

MRI
Useful when pain is disproportionate, diagnosis is uncertain or surgery is planned: marrow oedema across the synchondrosis and PTT tenosynovitis or tendinosis.

CT
Occasionally useful for a large ossicle, suspected coalition, arthrosis or if considering fusion or fixation.

Differential diagnosis

- Navicular stress fracture
- PTT tendinopathy or tear
- Talocalcaneal coalition
- Spring ligament injury
- Medial column arthritis

X-ray asks: what type? MRI asks: is it active?

Refs: [4,5,6,15]

6. First line treatment

Most patients deserve a structured conservative package before surgery.

Nonoperative care is not wait and see. It is a defined intervention with load control, pressure relief, mechanical support and rehabilitation.

1

Unload
Activity modification, ice and NSAIDs when appropriate. A boot or cast if acutely irritable.

2

Reduce pressure
Footwear with less medial pressure. Padding for prominence and bursitis.

3

Control mechanics
Medial arch support, UCBL style orthosis, customised insole when needed.

4

Rebuild capacity
PTT strengthening, calf flexibility, intrinsic foot control and graded return to sport.

Evidence to discuss honestly

28%
complete pain relief

41%
partial relief without surgery

30%
progressed to surgery

Paediatric retrospective series: 169 patients, 226 symptomatic feet. Complete relief often required several months of treatment.

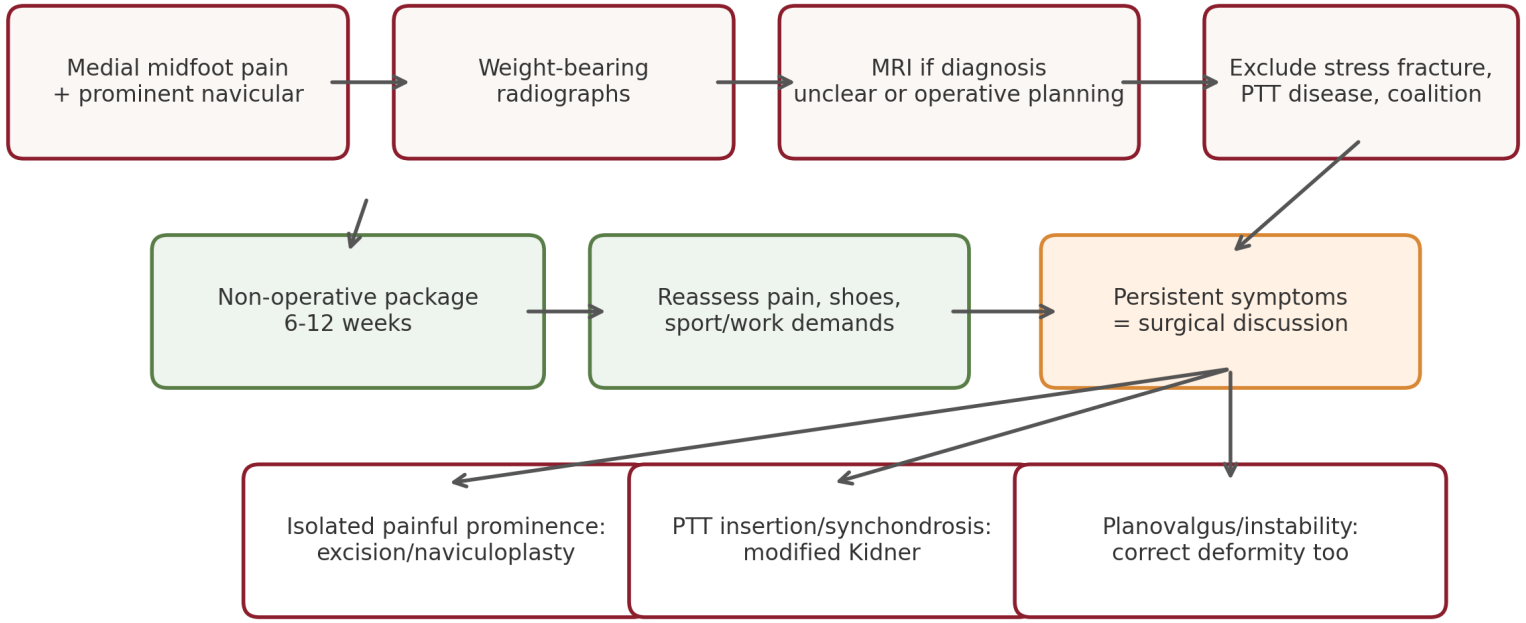
Escalate when focal pain persists despite a credible trial, especially if imaging confirms an active lesion and function remains limited.

Refs: [8,15]

7. Operative decision making

Choose the operation for the clinical pattern, not for the X-ray label alone.

Decision pathway: painful accessory navicular



Three questions before consenting

1 Is the pain focal?

Tenderness and reproduction must map to the accessory navicular or synchondrosis.

2 Has treatment failed?

The patient has had a credible package rather than vague reassurance.

3 Are mechanics driving pain?

Planovalgus, hindfoot valgus or PTT insufficiency changes the operation.

Evidence message

Simple excision and Kidner type procedures both report high satisfaction and low complication rates. Comparative evidence remains limited.

Refs: [9,10,11,12,13,15]

8. Operation choices

Select the least operation that solves both the pain generator and the mechanical problem.

Simple excision or naviculoplasty
Best for isolated painful prominence or a small symptomatic ossicle with competent PTT insertion.

Modified Kidner
Excision plus PTT repair, advancement or reattachment when the tendon insertion and synchondrosis are central.

Fusion or fixation
Selected large Type II ossicles, high demand patients or failed excision. Evidence base is less mature.

Flatfoot correction
If symptomatic planovalgus is the driver, address hindfoot or medial column mechanics at the same sitting or staged.

Avoid isolated excision
Marked planovalgus, PTT insufficiency, broad medial column instability or unclear pain generator.

Consent specifics
Scar sensitivity, neuritis, residual prominence, residual arch symptoms, recurrent pain and realistic return to sport.

The foot, not the X-ray, chooses the operation.

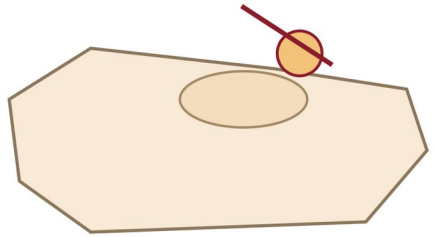
Shared decision: expectations should reflect the tendon repair and the mechanical correction, not just the size of the incision.

Refs: [1,9,10,11,12,13,15]

9. Surgical technique: practical pearls

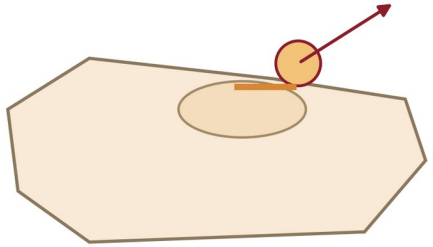
Aim: remove the irritant, preserve or restore PTT function and avoid medial wound morbidity.

1. Medial approach



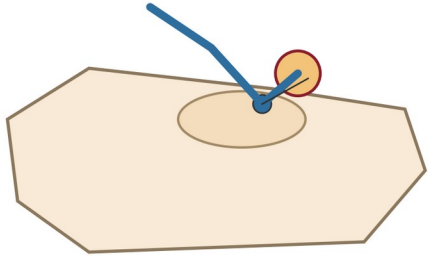
Protect saphenous nerve/vein
Identify PTT sheath

2. Excision + naviculoplasty



Remove ossicle and painful
fibrocartilaginous synchondrosis

3. PTT repair / anchor



Maintain/restore PTT line of pull
Address concomitant flatfoot

Technical priorities

1. **Incision centred over maximal tenderness or prominence**
2. **Protect saphenous nerve and vein**
3. **Excise ossicle and fibrocartilaginous synchondrosis**
4. **Contour navicular without over resection**
5. **Inspect PTT quality and restore line of pull if needed**
6. **If flatfoot is significant, do not expect Kidner alone to solve global deformity**

Failure modes

Inadequate excision | painful residual prominence | unrecognised PTT disease | untreated planovalgus | symptomatic scar or neuritis

Classic Kidner detached and advanced PTT. Modified approaches often preserve continuity and use anchors selectively.

Refs: [1,9,12,13,15]

10. Rehabilitation and expected outcome

The operation is small; the recovery is not always trivial.



0 to 2 w

Wound elevation
NWB or protected WB

2 to 6 w

Boot or cast
progress protected WB

6 to 12 w

Physio: inversion strength
calf and intrinsic control

3 to 6 m

Return to running or sport
if pain free and strong

Good news
Published series generally report pain improvement and high satisfaction after excision or Kidner type procedures.

Caution
Residual or recurrent pain can occur, especially when planovalgus or PTT dysfunction is not addressed.

Measure success
Pain relief, shoe tolerance, single leg heel raise, arch symptoms, work or sport return and patient reported outcome.

Complications to consent: scar sensitivity, neuritis, wound irritation, residual prominence, PTT symptoms, recurrent pain, stiffness and CRPS.

Refs: [9,12,15]

11. Consensus take home messages

A practical framework for the painful accessory navicular.

1 **Localise pain**
Symptoms must match the anatomical variant.

2 **Look beyond the ossicle**
Assess PTT function, hindfoot valgus and medial column stability.

3 **Use MRI selectively**
Most useful when the pain generator is uncertain or surgery is planned.

4 **Treat mechanics first**
Footwear, orthoses, immobilisation if irritable and PTT focused rehabilitation.

5 **Tailor surgery**
Excision, modified Kidner, fixation or flatfoot correction according to the clinical pattern.

6 **Consent honestly**
Results are usually good, but residual pain occurs when the mechanical driver is missed.

Final line

Do not operate on a picture. Operate on a reproducible pain generator and a mechanical diagnosis.

Refs: [2,4,8,9,12,15]

12. Selected references

Core sources used to support anatomy, imaging, nonoperative care, surgery and outcomes.

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Original anatomical and pathway illustrations adapted and completed from the submitted presentation draft.