

BOFAS Evidence Based Commissioning guidelines

Hindfoot arthritis

1. Introduction

- Hindfoot arthritis can be present in one or all of the hindfoot joints. It represents a disabling degenerative condition causing pain and dysfunction. It can have a similar impact on quality of life as that caused by hip arthritis and end stage heart failure¹.
- The joints concerned are the ankle (Dealt with in separate document), subtalar, talonavicular and calcaneocuboid.
- The majority of hindfoot arthritis is post traumatic² following fractures or severe sprains and this can affect patients of working age.
- Other causes of hindfoot arthritis include rheumatoid arthritis (RA)², other inflammatory arthropathies, metabolic disorders such as haemochromatosis, bleeding disorders and conditions causing deformity including neurological disease.
- More than 29,000 patients are referred from primary care to foot and ankle specialists per year with 'ankle pain'³. In RA 17% have initial involvement of the hindfoot and up to 71% have walking difficulty due to foot problems⁴.
- The treatment of hindfoot arthritis includes non operative and operative interventions. Accepted non operative interventions include: activity modification, walking sticks¹³, bracing/splints¹⁴, physiotherapy, orthotics and footwear adjustments and appropriate analgesia².
- Image guided/targeted injections¹⁷ can be used as a diagnostic and also therapeutic tool¹⁶.
- Arthroscopy⁵, osteotomies, soft tissue reconstructions and arthrodesis of individual or combinations of joints are accepted treatments for hindfoot arthritis/deformity.
- The commonly performed isolated fusions are: ankle (dealt with separately in detail), subtalar⁹, talonavicular⁶ and calcaneocuboid¹² or in combination: ankle/subtalar (tibiotocalcaneal)¹¹, subtalar/talonavicular/calcaneocuboid (Triple arthrodesis)⁷, ankle/subtalar/talonavicular/calcaneocuboid (pantalar)⁸ or paired arthrodeses e.g. talonavicular/calcaneocuboid¹⁰.

2. Hindfoot Arthritis - High Value Clinical Pathway

2.1 Primary Care

- Any patient with hindfoot osteoarthritis should be referred for an expert opinion from a Consultant Orthopaedic Foot & Ankle Surgeon.
- The referral should be made a priority in the presence of hindfoot deformity.
- The diagnosis of hindfoot arthritis is based on history, clinical findings and **weight bearing** radiographs +/- alignment views. Non-weight bearing views performed in primary care are rarely helpful and imaging is best left until seen in secondary care.

Suggested management algorithm:

Minimally symptomatic hindfoot arthritis:

- Many patients will get significant temporary and long term relief of symptoms from a comprehensive package of individually tailored conservative care. Recognised treatments include activity modification, walking stick¹³, bracing¹⁴, physiotherapy, orthotics and footwear adjustments, use of Ankle/foot orthoses (AFO) splints and appropriate analgesia. Treat inflammatory conditions as indicated.
- follow up patients at 6-monthly intervals

Symptomatic ankle arthritis:

- Unresponsive to conservative treatment
 - Refer to a Consultant Orthopaedic Foot & Ankle Surgeon for consideration of surgery.
- In the presence of deformity (Hindfoot varus/valgus, pes planus or pes cavus or fixed equinus)
 - Refer for an URGENT expert opinion from a Consultant Orthopaedic Foot & Ankle Surgeon.

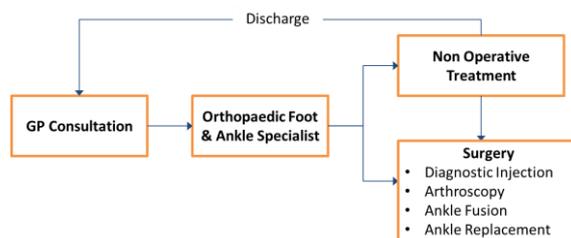
2.2 Secondary care

- Confirm diagnosis
 - Primary
 - Post-traumatic (the commonest)
 - Inflammatory
 - Neurological
- Assess ankle stability and adjacent joint mobility

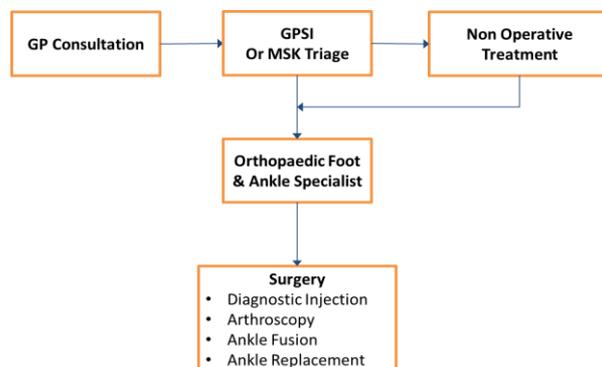
- Assess muscle/tendon balance
- Assess alignment of the forefoot/midfoot/hindfoot in relation to lower limb
- Consider MRI/CT to diagnose adjacent joint arthritis
- Consider diagnostic injections to localise joints involved.
- Counsel patient fully regarding operative and non operative options
- Ensure multidisciplinary approach- service should have availability of plaster room technicians, specialist care nurses, orthotists, and physiotherapists (+/- hydrotherapy)
- Data Collection – PROMs for all patients and/or validated clinical scores.

Figure 1 Example models of referral for evaluation

Standard Model



Alternative Model



Research

2.3 Research & Audit

- Patient Reported Outcome Measures - A validated clinical score (or PROM) should be captured preoperatively and one year following treatment. Acceptable scores include; Manchester-Oxford Foot & Ankle Questionnaire (MOXFQ), Foot Function Index (FFI).
- Quality of Life Scores should be captured preoperatively and one year following intervention (e.g. EuroQol (EQ5D) or Short Form-SF36)

2.4 Linked Metrics

- Population prevalence/ need – GP Read Codes (there are numerous read codes for hindfoot arthritis)
- There are no current ICD-10 codes specific for OA of the different hindfoot joints. We recommend modifications to ICD-11 to include a unique code for ankle osteoarthritis and possibly subtalar arthritis at least.
- There are no specific OPCS codes for ankle replacement or ankle fusion. There are up to 65 combinations of codes that can be used currently, making data analysis near impossible³. We recommend a specific OPCS code be assigned to code for ankle replacement and ankle fusion.

2.5 Patient/ Public/ Clinician Information

- Patient information - Patients must be counselled preoperatively regarding the benefits and risks of all surgical options and also the merits of non-operative management.
- GP guidance - easily accessible information on the risks and benefits of surgical intervention needs to be made available.

3. Hindfoot Arthritis – The Evidence base

Recognised non-operative treatments for hindfoot arthritis include activity modification, a walking stick¹³, ankle bracing¹⁴, physiotherapy, orthotics/footwear adjustments, use of AFO splints, and appropriate analgesia. Although the evidence base for these modalities is not comprehensive¹⁵, the costs are low and many patients will get significant temporary and long term relief of symptoms from a comprehensive package of individually tailored conservative care.

There is no good evidence to support the use of other more expensive modalities to treat ankle osteoarthritis including; Phonophoresis (The use of ultrasound to enhance the delivery of topically applied drugs), Prolotherapy (Injection of e.g.

dextrose into tissues to try to promote healing), Platelet Rich Plasma, Cryotherapy (Use of cooling to promote healing), and Acupuncture¹⁵. Intra articular local anaesthetics should only be used for diagnostic purposes by a specialist consultant orthopaedic surgeon.

3.1 Viscosupplementation – There is some evidence of efficacy in ankle osteoarthritis, but little evidence to support its effectiveness over physical therapy alone. A recent prospective clinical trial compared 3 week hyaluronic-acid injections to 6 weeks of exercise therapy. At 12-month follow-up, both groups showed significant pain relief and functional improvement, with no difference evident between groups. There is very little in the literature pertaining to its' use in the hindfoot other than the ankle. Use in other foot joints has shown equivocal results. **Recommendation: Viscosupplementation is no more effective than physical therapy alone.**

3.2 Arthroscopy & Debridement - Arthroscopic subtalar debridement can provide short-term pain relief. There is some evidence from several small studies that removal of loose bodies, debridement of osteochondral defects and resection of scar tissue can be beneficial¹⁸. There is no data to assess the cost effectiveness of arthroscopy in hindfoot arthritis. **Recommendation: Arthroscopy is a recognised treatment for ankle impingement or ankle/subtalar loose bodies and a decision on its likely benefit should be made by a Consultant Orthopaedic Foot & Ankle Surgeon.**

3.3 Ankle Replacement – Currently this is the only joint in the hindfoot that is routinely replaced (Arthroplasty) and this is covered in detail as a separate entity.

3.4 Hindfoot Fusion (arthrodesis)

- Hindfoot arthritis is not a specific entity. There are several joints in the hindfoot and fusion of one or more of the joints maybe employed to solve a problem.
There may also be a need to balance the foot using additional soft tissue procedures such as tendon lengthening or transfers.
- The key is correct diagnosis. The treatment options, including both operative and non operative should be discussed with the patient by an experienced Orthopaedic Foot & Ankle Surgeon capable of performing osteotomy,arthrodesis, arthroscopy and soft tissue reconstruction around the hindfoot as required².
- Surgery should be carried out in units with onsite imaging facilities, full anaesthetic service, care for all co-morbidities, post-operative inpatient

care and if necessary supportive care (HDU, ITU), clean air theatre and a full range of surgical instruments and implants.

- Arthrodesis may involve the ankle (dealt with separately in detail), the subtalar joint, the talonavicular joint or the calcaneocuboid joint in isolation. The joints are not infrequently fused in combination: the ankle and subtalar as a tibiotocalcaneal fusion, the subtalar/talonavicular and calcaneocuboid as a triple arthrodesis²² commonly and others occasionally.
- There are papers looking at series of each of these in a variety of different scenarios. Most of these show high patient satisfaction and improved foot scores^{7,19,20}. The American Orthopaedic Foot & Ankle score is the most frequently used scoring system in the literature but is not specifically designed with the hindfoot or fusion in mind.
- Ankle/subtalar and more recently triple arthrodesis may be performed arthroscopically. Surgery to the other joints is usually performed open. The overall success rate for this combination of procedures is in excess of 90% but it can take 12 months or more to fully rehabilitate
- The non union rate for hindfoot fusion is reported at around 5-10% although many of these series use old methods of fixation, and thus the current rate is generally around 5%.
- The relative risk of non union is much higher in those who smoke and reported at around 2.7 times that of non smokers²¹
- There are reports in several series of degenerative disease in joints surrounding previously fused ones in the hindfoot²². Most of these however appear asymptomatic and the patients generally satisfied.

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