Complete Summary

GUIDELINE TITLE

Hammertoe syndrome.

BIBLIOGRAPHIC SOURCE(S)

Academy of Ambulatory Foot and Ankle Surgery. Hammertoe syndrome. Philadelphia (PA): Academy of Ambulatory Foot and Ankle Surgery; 2003. 8 p. [31 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Academy of Ambulatory Foot and Ankle Surgery. Hammertoe syndrome. Philadelphia (PA): Academy of Ambulatory Foot and Ankle Surgery; 2000. 23 p.

The guideline is reviewed and updated twice a year as needed (in May and October).

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory information has been released.

On April 7, 2005, after concluding that the overall risk versus benefit profile is unfavorable, the FDA requested that Pfizer, Inc voluntarily withdraw Bextra (valdecoxib) from the market. The FDA also asked manufacturers of all marketed prescription nonsteroidal anti-inflammatory drugs (NSAIDs), including Celebrex (celecoxib), a COX-2 selective NSAID, to revise the labeling (package insert) for their products to include a boxed warning and a Medication Guide. Finally, FDA asked manufacturers of non-prescription (over the counter [OTC]) NSAIDs to revise their labeling to include more specific information about the potential gastrointestinal (GI) and cardiovascular (CV) risks, and information to assist consumers in the safe use of the drug. See the FDA Web site for more information.

Subsequently, on June 15, 2005, the FDA requested that sponsors of all non-steroidal anti-inflammatory drugs (NSAID) make labeling changes to their products. FDA recommended proposed labeling for both the prescription and over-the-counter (OTC) NSAIDs and a medication guide for the entire class of

prescription products. All sponsors of marketed prescription NSAIDs, including Celebrex (celecoxib), a COX-2 selective NSAID, have been asked to revise the labeling (package insert) for their products to include a boxed warning, highlighting the potential for increased risk of cardiovascular (CV) events and the well described, serious, potential life-threatening gastrointestinal (GI) bleeding associated with their use. FDA regulation 21CFR 208 requires a Medication Guide to be provided with each prescription that is dispensed for products that FDA determines pose a serious and significant public health concern. See the FDA Web site for more information.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Hammertoe syndrome

GUIDELINE CATEGORY

Diagnosis
Treatment

CLINICAL SPECIALTY

Podiatry

INTENDED USERS

Podiatrists

GUIDELINE OBJECTIVE(S)

To provide recommendations for the diagnosis and treatment of hammertoe syndrome

TARGET POPULATION

Patients with hammertoe syndrome

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. History, including an evaluation of the chief complaint, nature, location, duration, onset, course, anything that improves or exacerbates, any previous treatment, and past medical history (allergies/medications, medical history, surgical history, family history, social history)
2. Physical examination, including peripheral vascular, neurological, orthopedic (palpation, range of motion, biomechanical/gait analysis) dermatologic exams
3. Diagnostic procedures, including radiological examination, laboratory tests, additional tests (i.e., nerve conduction studies, electromyography, noninvasive vascular testing)

Treatment

1. Nonsurgical treatment, such as debridement, padding, shoe modification, oral anti-inflammatory medication (NSAIDs), anti-inflammatory injectables, orthotics, orthodigital devices
2. Surgical treatments, such as:
    - Tendon lengthening/tenotomy
    - Capsulotomy
    - Arthroplasty
    - Osteotomy or ostectomy
    - Exostosectomy
    - Arthrodesis
    - Diaphysectomy
    - Phalangectomy
    - Skin-plasty
3. Postoperative management, including x-rays, follow-up visits, weight bearing or immobilization, and orthotics

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline development process began with a thorough MEDLINE search as well as a "call for papers" from the membership of the Academy of Ambulatory Foot and Ankle Surgery at large.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Drafts of the guidelines were reviewed in detail by each member of the Board of Trustees.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

I. Diagnosis
   A. History: This may include any of the following:

1. An evaluation of the chief complaint (including the nature, location, duration, onset, course, anything that improves or exacerbates, and any previous treatment)
2. The past medical history (including allergies/medications, medical history, surgical history, family history, and social history)

B. Physical examination: The following may be important parts of the appropriate examination:
1. Peripheral vascular
2. Neurological
3. Orthopedic (involvement may be ascertained by examining the foot in either the weight bearing or non-weight bearing positions)
   a. Palpation
   b. Range of motion
   c. Biomechanical/gait analysis
4. Dermatologic (presence of lesions or hyperkeratoses)

II. Diagnostic Procedures
A. Radiological examination: X-rays must be taken. They may be used to evaluate the type of deformity as well as other factors. X-rays may be weight bearing, partial weight bearing, or non-weight bearing.
B. Laboratory tests: Not required in the nonsurgical patient, unless underlying factors exist (i.e., infection or inflammatory disease)
C. Additional tests (nerve conduction studies, electromyography (EMG), noninvasive vascular testing). These studies may be utilized in isolated situations when deemed necessary.

III. Nonsurgical Treatment
A. The primary reasons for nonsurgical treatment are:
1. Due to the patient's health status, surgery is contraindicated
2. The patient does not want surgery

B. Types of nonsurgical treatment
1. Debridement
2. Padding
3. Shoe modifications
4. Oral anti-inflammatory medication (NSAIDs)
5. Anti-inflammatory injectables
6. Orthotics
7. Orthodigital devices

IV. Surgical Treatment
A. The primary reasons for surgical treatment are:
1. Failure of nonsurgical treatment
2. Impracticality of nonsurgical treatment
3. The patient desires correction of a presenting deformity that is painful and/or causes a degree of loss of function.
4. The patient is informed of the procedure(s) to be performed, the treatment alternatives, and the reasonable risks involved and elects to have surgical intervention.

B. Site of surgery: The surgical treatment of hammertoe syndrome is usually performed in the doctor's office; however, the hospital or ambulatory surgical center may also be appropriate.
C. Anesthesia: Local anesthesia is sufficient, unless there are extenuating circumstances. Intravenous (IV) sedation may be administered with this.

D. Hemostasis: Absence of bleeding is not required.
E. Surgical preparation: Aseptic preparation ("usual" aseptic scrub, prep, draping, and sterility).
F. Preoperative lab: May or may not be necessary based on the patient's past medical history and current medical history.
G. Prophylactic antibiotics: At the discretion of the surgeon (or based upon requirement: i.e., mitral valve prolapse).
H. Pathological analysis of surgically removed tissue: Recommended.
I. Bilateral or multiple surgery: May be performed at the same surgical session, or in different surgical sessions.

V. Surgical Procedures for the Correction of Hammertoe Syndrome

Procedures may be performed as isolated situations or in conjunction with other procedures.

A. Metatarsophalangeal joint (MPJ) contractures
    1. Extensor tendon lengthening
    2. MPJ capsulotomy
    3. Release of MPJ collateral joints
    4. Flexor release
    5. Proximal interphalangeal joint (PiPJ) arthroplasty (or proximal phalangeal osteotomy)
    6. Associated metatarsal osteotomy or ostectomy
    7. Exostosectomy
B. Flexible hammertoe
    1. PiPJ arthroplasty
    2. Flexor tendon lengthening/flexor tenotomy
    3. Extensor tendon lengthening/tenotomy/MPJ capsulotomy (Have been shown to be effective either as isolated procedures, or in conjunction with other procedures).
    4. Exostosectomy
C. Hammertoe (semirigid/rigid)
    1. PiPJ arthroplasty
    2. PiPJ arthrodesis
    3. Exostosectomy
    4. Diaphysectomy of the proximal phalanx
    5. Middle phalangectomy
    6. Soft tissue releases/lengthening
D. Clawtoe (flexible)
    1. PiPJ arthroplasty
    2. PiPJ arthrodesis
    3. Exostosectomy
    4. Extensor tendon lengthening/tenotomy
    5. Flexor tendon lengthening/tenotomy
    6. Capsulotomy
E. Clawtoe (semirigid/rigid)
    1. PiPJ/distal interphalangeal joint (DiPJ) arthroplasty
    2. PiPJ/DiPJ arthrodesis
    3. Diaphysectomy of proximal and/or middle phalanx
    4. Exostosectomy
    5. Extensor tendon lengthening/tenotomy
    6. Flexor tendon lengthening/tenotomy

7. Capsulotomy

F. Mallet toe (flexible)
   1. DiPJ arthroplasty
   2. Exostosectomy
   3. Diaphysectomy of the middle phalanx
   4. Flexor tendon lengthening/tenotomy
   5. Capsulotomy

G. Mallet toe (semirigid/rigid)
   1. DiPJ arthroplasty
   2. Exostosectomy
   3. Diaphysectomy of the middle phalanx
   4. Flexor tendon lengthening/tenotomy
   5. Capsulotomy

H. Overlapping fifth toe
   1. Extensor tendon lengthening/tenotomy
   2. Capsulotomy (MPJ)
   3. Skin-plasty
   4. PiPJ arthroplasty
   5. Metatarsal osteotomy
   6. Diaphysectomy of the proximal phalanx
   7. Tendon transfer

I. Underlapping fifth (or other) toe
   1. Arthroplasty
   2. Diaphysectomy
   3. Extensor tendon lengthening/tenotomy
   4. Flexor tendon lengthening/tenotomy
   5. Capsulotomy
   6. Skin-plasty

J. Exostosis or hypertrophied condyle (with or without interdigital heloma)
   1. Exostosectomy
   2. Arthroplasty

VI. Postoperative Management

A. Radiographs: Should be taken immediately following surgery. Subsequent x-rays may be taken as the need arises.

B. Postoperative visits: In the absence of complications, the patient should initially be seen within the first week following the procedure(s). Subsequent visits are determined by the procedures performed and the postoperative course.

C. Weight bearing or immobilization: Full weight bearing in a postoperative (surgical) shoe, regular shoe, or "cut out" shoe is indicated based upon the procedure(s) performed and on the individual patient. Generally, a surgical dressing is applied in the immediate postoperative period. This is modified with time and the postoperative course. The return to a normal shoe is based upon the procedure(s) performed and the postoperative course of the individual patient. Casting may be utilized, but it is not mandatory.

D. Orthotics: May be helpful postoperatively.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Treatment may relieve or reduce pain, reduce the deformity, eliminate lesions (or reduce severity), and arrest progression of deformity.

POTENTIAL HARMS

Postoperative Complications

- Edema
- Recurrence/regrowth
- Pain
- Numbness
- Stiffness
- Flailtoe
- Malposition
- Malunion/nonunion
- Infection
- Gangrene
- Vascular complications
- Reflex sympathetic dystrophy

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 (revised 2003 Sep)

GUIDELINE DEVELOPER(S)

Academy of Ambulatory Foot and Ankle Surgery - Medical Specialty Society

SOURCE(S) OF FUNDING

Academy of Ambulatory Foot and Ankle Surgery (AAFAS)

GUIDELINE COMMITTEE

Preferred Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

The committee consisted of five (5) members who were board certified, had a minimum of ten (10) years of clinical practice experience, and a minimum of five (5) years of teaching experience.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the Academy of Ambulatory Foot and Ankle Surgery (AAFAS) (formerly the Academy of Ambulatory Foot Surgery), 1601 Walnut Street, Suite 1005, Philadelphia, PA 19102; Web site, www.academy-afs.org.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on October 12, 2000. The information was verified by the guideline developer as of December 8, 2000. This summary was updated by ECRI on December 19, 2003. The information was verified by the guideline developer on December 29, 2003. This summary was updated on May 3, 2005 following the withdrawal of Bextra (valdecoxib) from the market and the release of heightened warnings for Celebrex (celecoxib) and other nonselective nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI on June 16, 2005, following the U.S. Food and Drug Administration advisory on COX-2 selective and non-selective non-steroidal anti-inflammatory drugs (NSAIDs).

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