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# METATARSALGIA A YET UNSOLVED PROBLEM?

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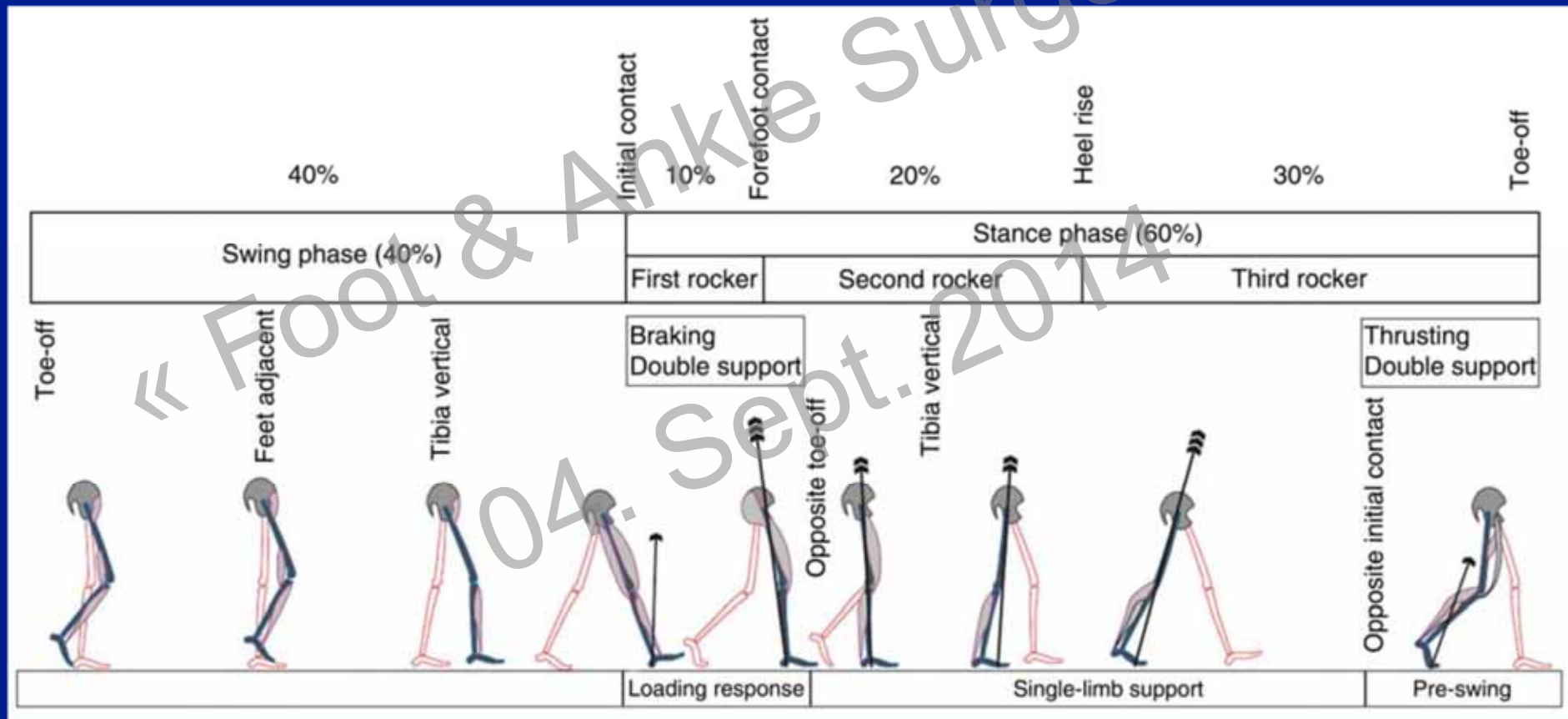
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# INTRODUCTION

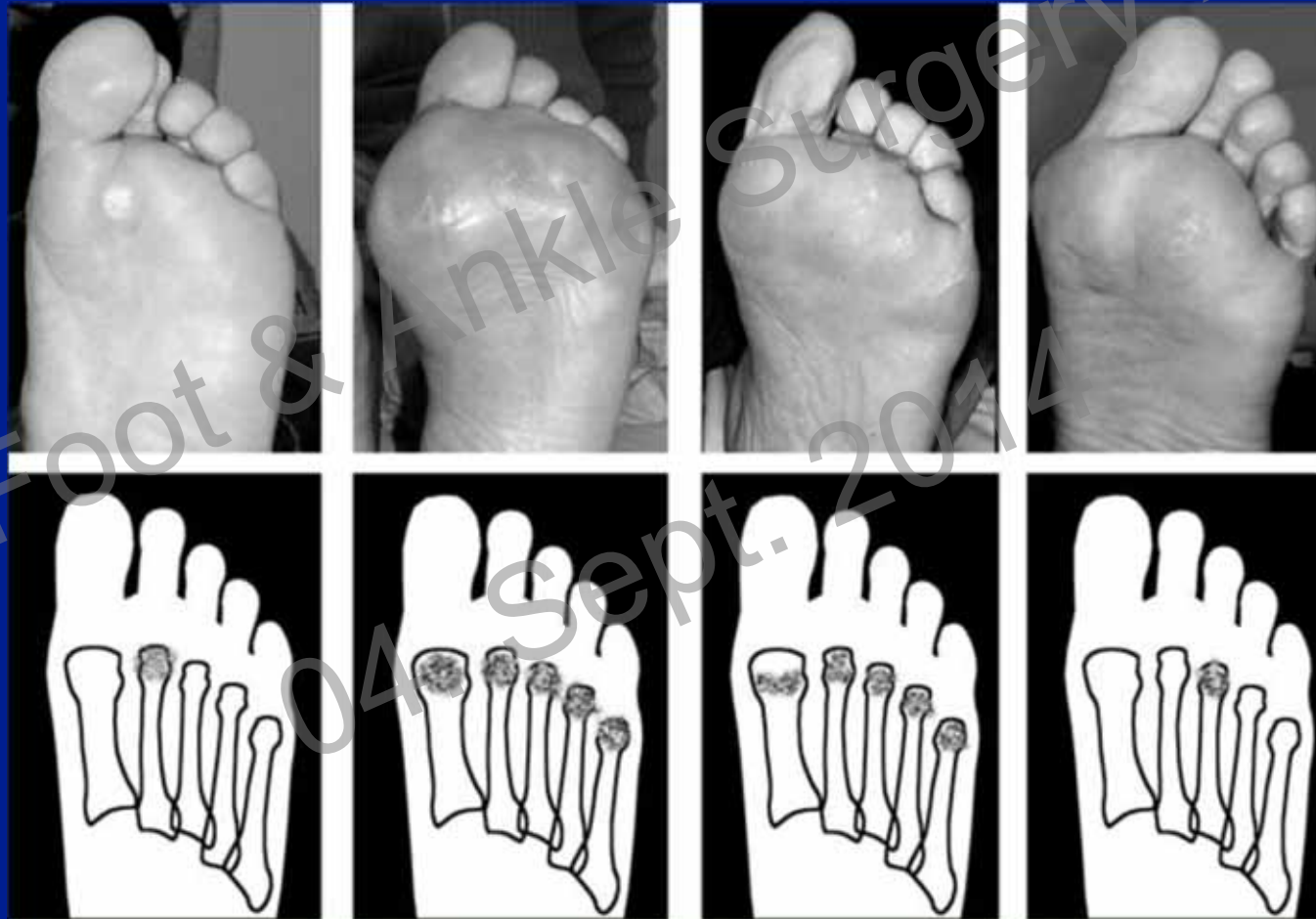
- Most common problem
- Pain across plantar forefoot
- Beneath second through fourth metatarsal head



# DEFINITION

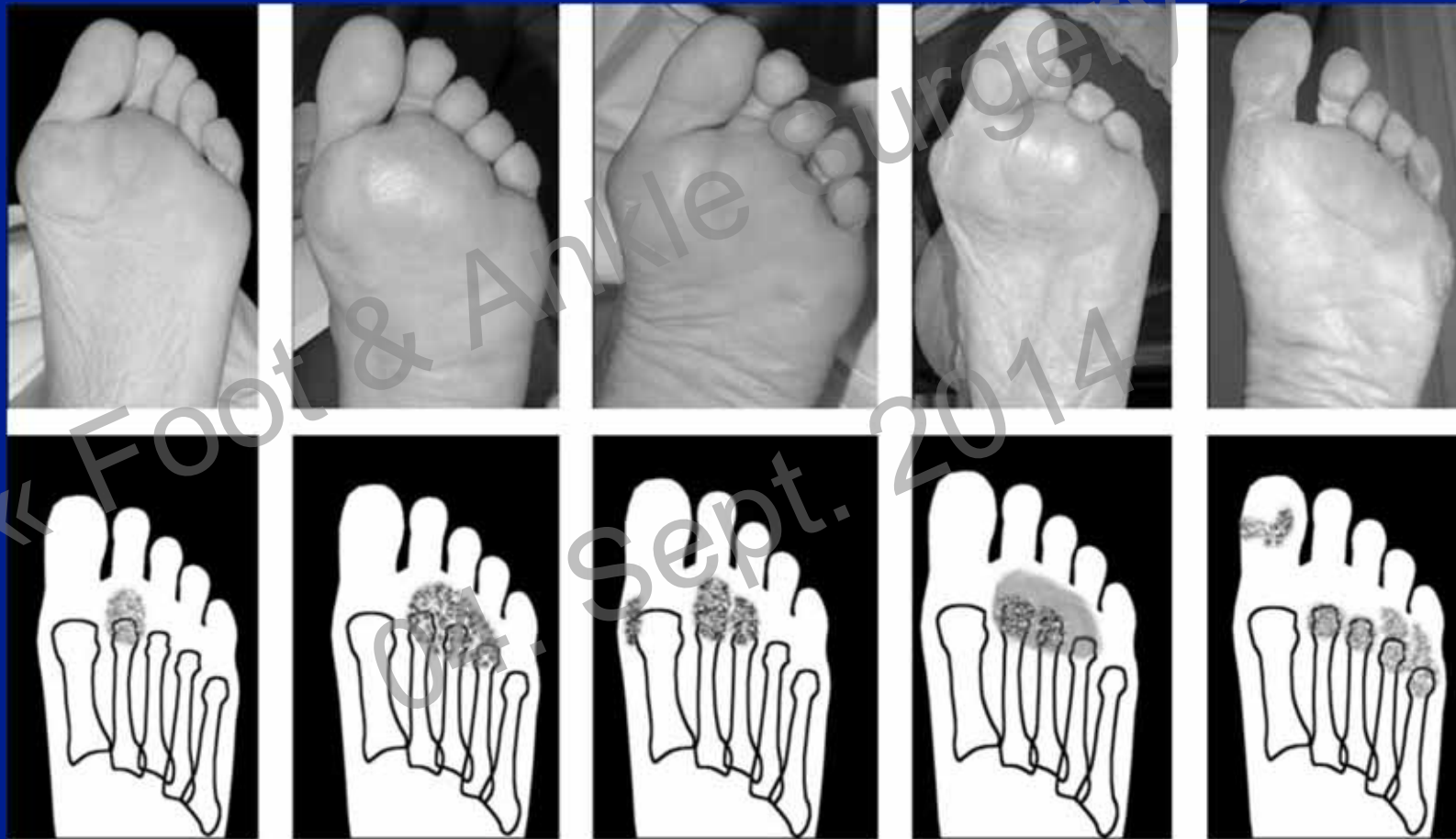


# CLINICAL PRESENTATION SECOND ROCKER



**HYPERKERATOSES STRICTLY UNDER  
METATARSAL HEADS**

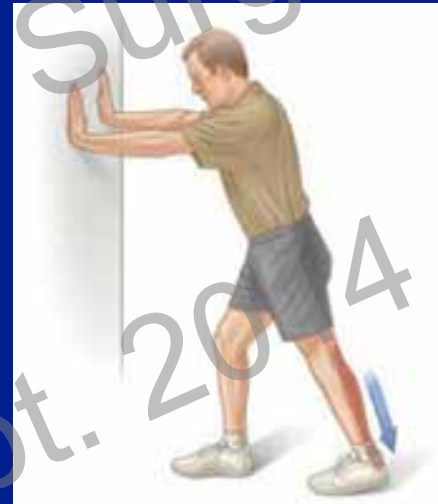
# CLINICAL PRESENTATION THIRD ROCKER



**HYPERKERATOSES CONFLUENT AND  
DISTAL TO METATARSAL HEADS**

# NONSURGICAL TREATMENT

- **Insufficient evidence**
- **Satisfactory relief**
- **Stretching exercises**
  - Lengthens triceps
- **Shoe modifications**
  - Better pressure distribution
  - MT bars
  - Rocker-bottom sole
- **Injections**
  - No injections into MTP joints !!!
- **Shaving of callus**



# WHEN CONSERVATIVE MEASURES FAIL A SIMPLE RULE THAT WORKS

## SECOND ROCKER

Elevation needed

## THIRD ROCKER

Shortening needed



# SURGICAL OPTIONS



## Bones

- Distal oblique metatarsal osteotomy
- Midshaft segmental metatarsal osteotomy
- Proximal or basal metatarsal osteotomy
- First tarsometatarsal fusion
- Metatarsal head resection
- Plantar condylectomy

## Soft-tissues

- Gastrocnemius release
- Flexor-extensor transfer



# DISTAL OBLIQUE METATARSAL OSTEOTOMY

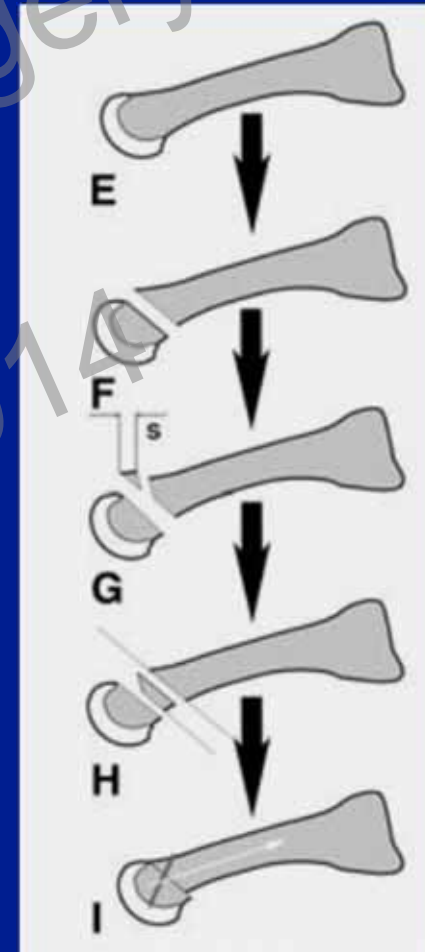
## Indications

- Third rocker metatarsalgia
  - MTP-joint instability
  - MT overlength

## Contraindications

- Osteoporosis
- Trophic disturbances
- Second rocker metatarsalgia

Coaxial shortening



# TRIPLE-WEIL OSTEOTOMY



# DISTAL OBLIQUE METATARSAL OSTEOTOMY - RESULTS

- **Good-to-excellent:** 70-100%
- **Complications**
  - Floating-toe 30%
  - Stiffness
  - MTP- Hyperextension 8-15%

Garg R et al. Foot Ankle Int; 29: 1009-1014, 2008

Espinosa N et al; Tech Foot Ankle Surg; 6: 254-263, 2007

Migues A et al. Foot Ankle Int; 25: 609-613, 2004

# FLEXOR-EXTENSOR-TRANSFER

