

# Audit of ROTO glide implant arthroplasty for Hallux Rigidus- Early results

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# Introduction

- Hallux rigidus is the **second** most common forefoot problem
- Affects 5-40% adult population, more in men
- Degenerative or post-traumatic
- Pain, stiffness and enlargement of joint



# Staging: Couglin & Shurnas (2003)

**Coughlin and Shurnas Classification**

	<i>Exam Findings</i>	<i>Radiographic Findings</i>
Grade 0	Stiffness	Normal
Grade 1	mild pain at extremes of motion	mild dorsal osteophyte, normal joint space
Grade 2	moderate pain with range of motion increasingly more constant	moderate dorsal osteophyte, <50% joint space narrowing
Grade 3	significant stiffness, pain at extreme ROM, no pain at mid-range	severe dorsal osteophyte, >50% joint space narrowing
Grade 4	significant stiffness, pain at extreme ROM, pain at mid-range of motion	same as grade III

# Staging: Couglin & Shurnas (2003)



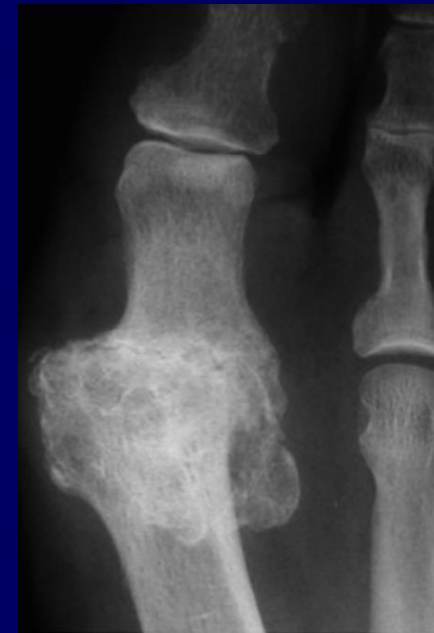
1



2



3



4

# Surgical Options

**Early stages:** Cheilectomy/Osteotomy

**Late stages:** Arthrodesis

More recently **joint replacement**, either hemi- or total arthroplasty is becoming an increasingly popular option for advanced disease.

# Benefits of MTPJ replacement

- Pain relief
- Maintains normal anatomy
- Maintain stable soft tissue balance
- Improve ROM

# Limitations of available implants

- Ceramic designs lead to osteolysis
- Sialistic leading to fractures/synovitis
- Loosening due to toggle effect
- Some prosthesis too short
- Mismatch with the contour of the joint

Issue date: **November 2005**

# **Metatarsophalangeal joint replacement of the hallux**

Understanding NICE guidance –  
information for people considering  
the procedure, and for the public



# NICE 2005

More studies are needed that look at how long the different types of artificial joint last, and what happens in people who've had them in place for a long time.

# ROTO-glide

- First launched in 1999 in Denmark and used in the UK from 2002 onwards
- The design which was developed in UK has remained unchanged since 2000.

# ROTO-glide components



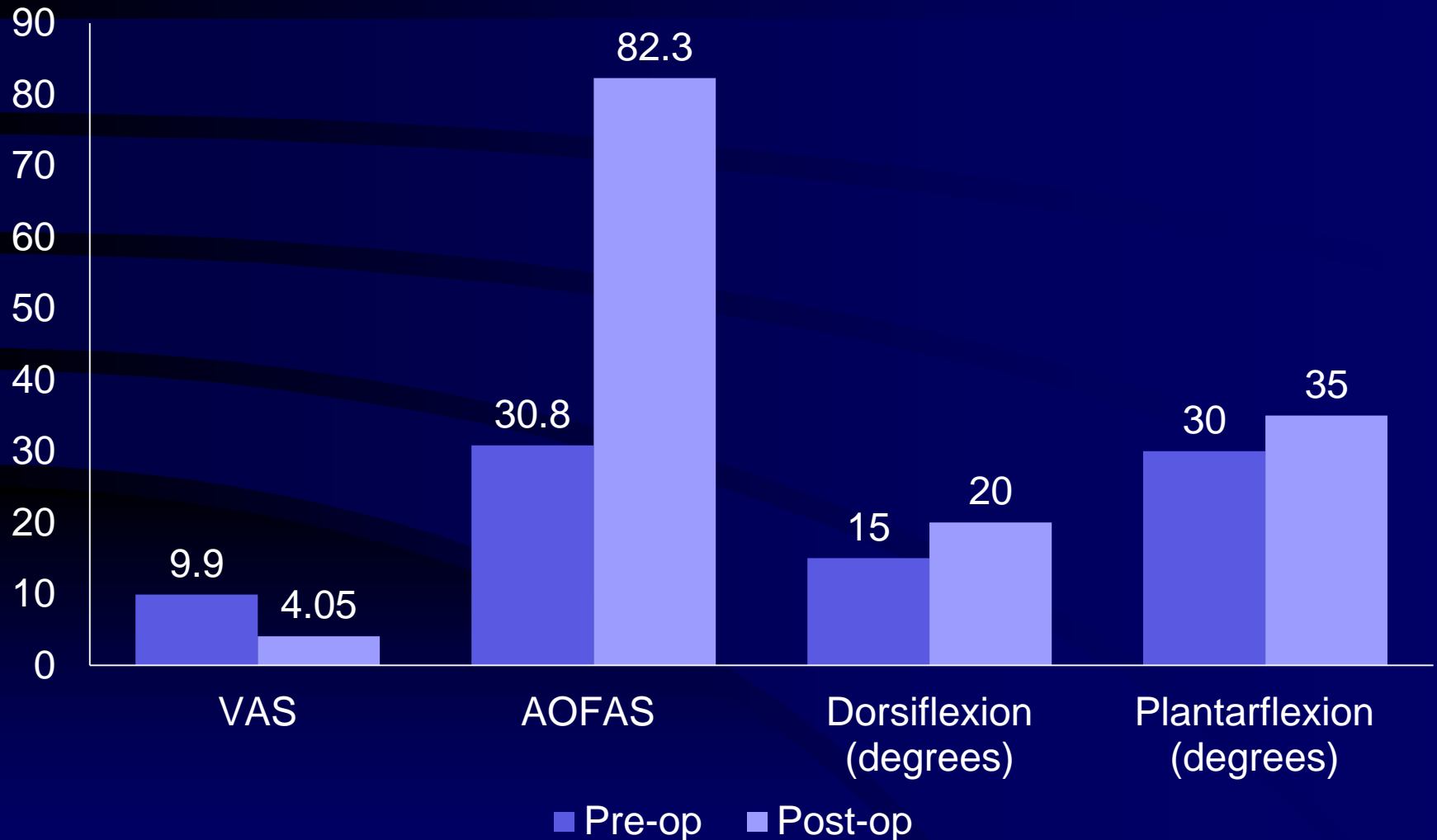
# Rotoglide TRIAL

- Part of national trial performed at 4 centers in UK.
- Mr. Limaye part of the national trial
- Study started at South Tees, being currently reviewed at Oswestry.
- This study is due for presentation at BOFAS this year

# South Tees Study

- Prospective study between January 2013 – May 2014
- 20 patients ( 24 feet ) with average follow up 18.9 months

# Functional Outcomes



# North Tees Experience

- Prospective study between May 2014 – May 2015
- 9 patients ( 10 feet )
- 2 males and 7 females
- Average age 61 years(58-66 years)

# Inclusion Criteria

- Stage II & stage III Hallux Rigidus
- Failure of non operative treatment
- Patients over 40 years, not keen on fusion
- Non Inflammatory arthritis



# Exclusion criteria

- DM
- Vascular compromise
- Multiple co-morbidities
- Hallux valgus
- Very stiff toe(Stage 4 )
- Inflammatory arthritis

# Assessment tools

Pre- & Post-operative:

- Clinical examination (including ROM)
- AOFAS scores
- X-Rays (standing)
- Post-op reviews at 3, 6 & 12 months

# AOFAS- 100 points

## **Hallux Metatarsophalangeal-Interphalangeal Scale**

### **Pain (40 points)**

None	40
Mild, occasional	30
Moderate, daily	20
Severe, almost always present	0

### **Function (45 points)**

#### *Activity limitations*

No limitations	10
No limitation of daily activities, such as employment	7
Limited daily and recreational activities	4
Severe limitation of daily and recreational activities	0

#### *Footwear requirements*

Fashionable, conventional shoes, no insert required	5
Comfort footwear, shoe insert	3
Modified shoes or brace	0

#### *MTP joint motion (dorsiflexion plus plantarflexion)*

Normal or mild restriction (75° or more)	10
Moderate restriction (30°-74°)	5
Severe restriction (less than 30°)	0

#### *IP joint motion (plantarflexion)*

No restriction	5
Severe restriction (less than 10°)	0

#### *MTP-IP stability (all directions)*

Stable	5
Definitely unstable or able to dislocate	0

#### *Callus related to hallux MTP-IP*

No callus or asymptomatic callus	5
Callus, symptomatic	0

### **Alignment (15 points)**

Good, hallux well aligned	15
Fair, some degree of hallux malalignment observed, no symptoms	8
Poor, obvious symptomatic malalignment	0

Total= 100

# Our standard- Erkocak et al

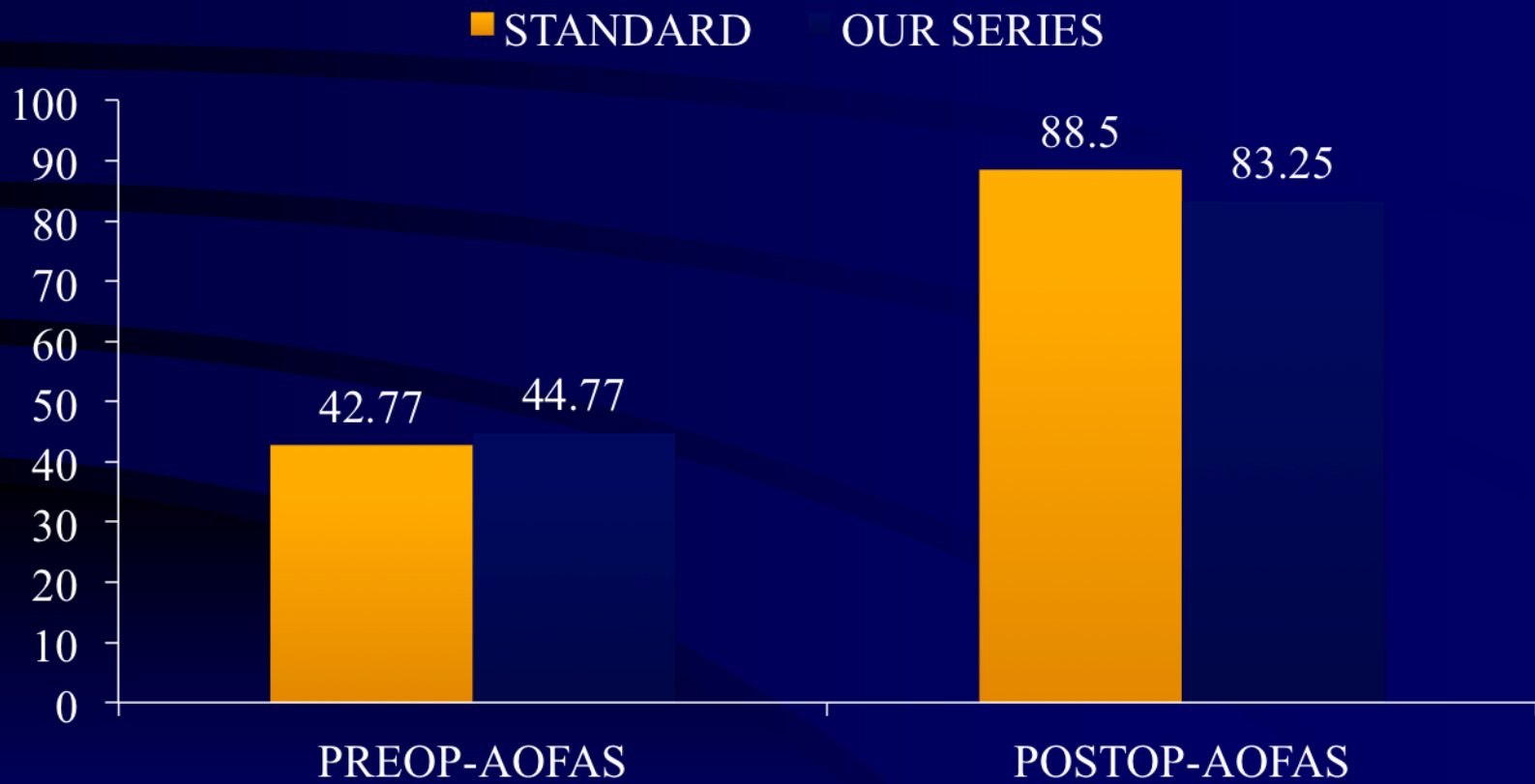
Foot and ankle Int Nov 2013

- 24 patients
- 29.9 months follow up
- Retrospective series

# Our results

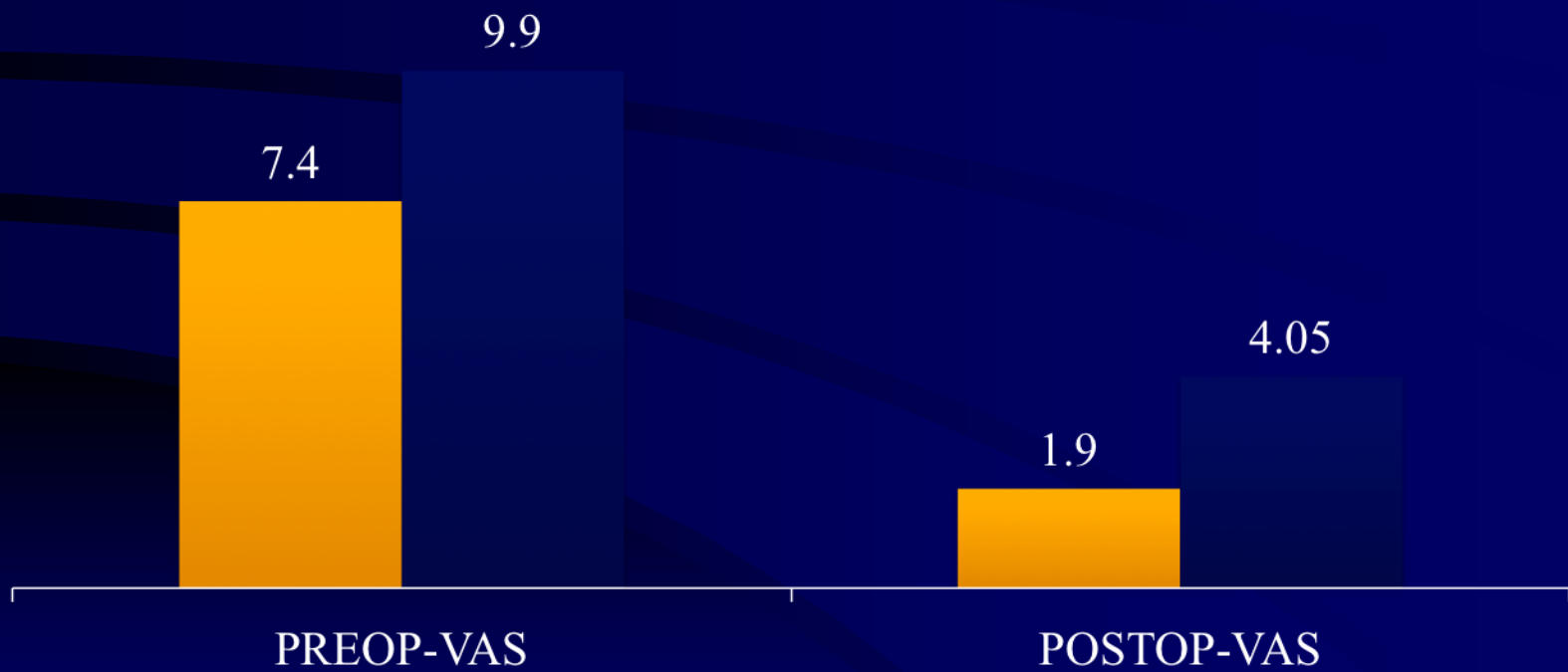
- Mean follow up : 6 months(1 ½ - 12)
- Mean pre-op range of motion:
  - 15° Dorsiflexion
  - 30° Plantarflexion
- Stiffness-1
- Total revisions to arthrodesis- None

# AOFAS SCORES



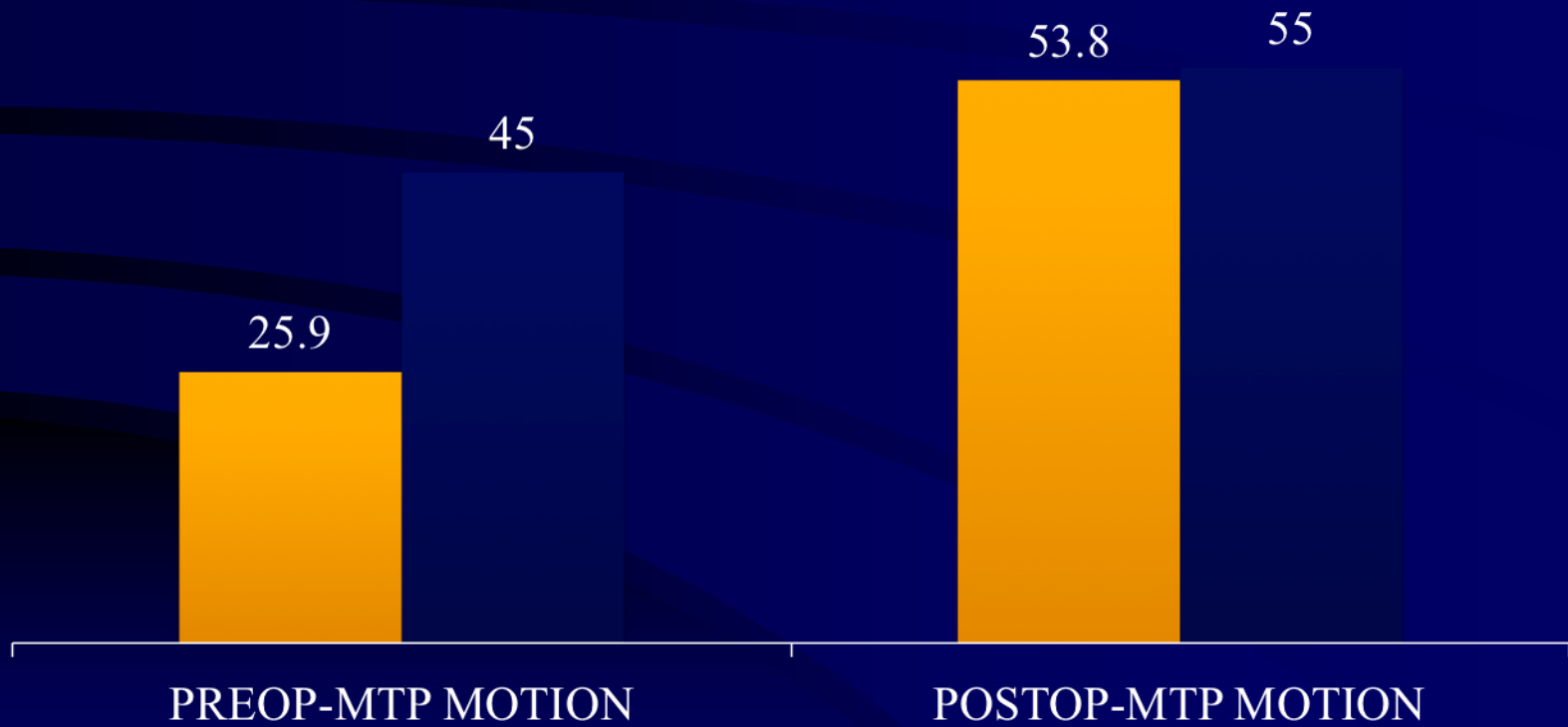
# VAS-SCORES

■ STANDARD ■ OUR SERIES



# MTP MOTION

■ STANDARD ■ OUR SERIES





# Post-op ROM



# Pre & Post-op X-rays



# Post-op X-rays



# Post-op X-rays



1 year follow up

# Future audit loop

- Longer follow up
- Working towards publications
- Early ROM on the day of surgery

# NICE guidelines

- Careful patient selection
- Patient understanding what is involved
- Results to be monitored

# Conclusion

- MTPJ replacement is gaining popularity
- Our results match with the national guidelines
- Provides pain relief with maintaining ROM
- Very effective option in the management of hallux rigidus



Thank you