Resection Arthroplasty for Rheumatoid Forefoot Deformity

Jun-ichi Fukushi, M.D.
Yasuharu Nakashima, M.D.
Yukihide Iwamoto, M.D.

Department of Orthopedic Surgery,
Graduate School of Medical Sciences,
Kyushu University, Fukuoka, Japan
Resection Arthroplasty for Rheumatoid Forefoot Deformity

Jun-ichi Fukushi, M.D.
Yasuharu Nakashima, M.D.
Yukihide Iwamoto, M.D.

My disclosure is in the final AOFAS program book. I have no potential conflicts with this presentation.
Purpose

To assess the results of resection arthroplasty for the rheumatoid forefoot deformities.

Patients and Method : 1

Patients :

24 patients (38 feet)
21 women (34 feet) and 3 men (4 feet)
Average age : 61.9 years
Average follow up period : 72 month

Surgical procedure :

2nd to 5th MTP : resection of the metatarsal heads
(plantar incision; LeLievre 1961, Kates 1967)
1st toe : arthrodesis (30 feet)
resrection (8 feet)
Patients and Method : 2

Clinical evaluation :
✓ Patient satisfaction : excellent · good · fair · poor
✓ Recurrence of planter pain
✓ Presence/recurrence of hammer toe

Radiological evaluation : 128 lessor toes (32 feet)
① Presence of a deformity in the proximal phalanx
② Distance between proximal phalanx and metatarsal stump
③ Presence of postoperative bone remnant
Results: clinical evaluation

Patient satisfaction

Excellent (no pain) : 7
Good (some pain, but acceptable) : 22
Fair (improvement of pain) : 5
Poor (no improvement) : 4

76% were excellent and good

However, 3 cases (4 feet, 11%) were poor.

Recurrence of planter pain

13 of 128 lesser MTP joints

Recurrence of hammer toe

22 of 128 lesser MTP joints
The recurrence of planter pain was associated with the presence of proximal phalanx deformities (p=0.0060), and was inversely correlated with the distance between proximal phalanx and metatarsal stump (p=0.0345).
The recurrence of hammer toe was strongly associated with the presence of preoperative hammer toe deformities (p=0.0012), and was inversely correlated with the distance between proximal phalanx and metatarsal stump (p<0.0001).
62 y.o., female: pain recurred in 5\textsuperscript{th} toe

Preoperative radiograph

Postoperative radiograph

Follow up (8 years)

Proliferative change was present in the 5\textsuperscript{th} proximal phalanx. Two weeks after the surgery, the 5\textsuperscript{th} MTP joint got swollen, and pain recurred. Planter callosity recurred in 2 years, followed by ulceration in 4 years after the surgery (satisfaction: poor).
Planter pain recurred in the 2nd and 3rd MTP 3 years after the resection, which required metatarsal trimming. The distance between the proximal phalanx and the metatarsal stump in the 2nd and 3rd MTP was inadequate (arrows) (satisfaction: poor).
Conclusion

- Resection arthroplasty is a satisfactory method of treatment for symptomatic RA forefoot.

- To avoid a recurrence of metatarsal joint pain, acquiring appropriate gap between proximal phalanx and metatarsal stump is important.

- In addition, surgeons should pay attention for the existence of preoperative deformities in the proximal phalanx, where additional bone resection or synovectomy may be considered.

References: