



Scarf Bunionectomy in a Patient Series >65 Years Old



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Background

- The Scarf Bunionectomy is commonly utilized for the correction of moderate and severe hallux valgus deformity
- The Scarf is a “powerful”, stable, predictable, and reproducible procedure for this deformity
- Currently there is no literature supporting the use of this procedure in patients older than 65 years
- The reported complications in the literature include “troughing”(35%)⁵, recurrence (6%)¹⁰, arthrosis(4%)¹⁰, stress fracture(3%)², and neuritis(8%)⁶
- Some authors have cautioned that the Scarf Bunionectomy should be limited to young patients with strong bone, and that osteoporosis is a contraindication to the procedure.
- We report a retrospective analysis of the Scarf Bunionectomy performed on patients older than 65 at the time of their surgery.

Materials and Methods

- A retrospective review of 73 patients (94 feet)
- October 2002 – August 2006
- Scarf Bunionectomy for hallux valgus (Primary procedure)
- All patients >65 years old at time of surgery
- 21 patients (26 feet) - Scarf Bunionectomy alone
- 52 patients (68 feet) – Scarf/Akin Bunionectomy
- 62 patients (82 feet) had other deformities corrected at the time of surgery
 - Weil metatarsal osteotomies (WMO)
 - Hammer toe correction (HT)
 - Tailor's bunion correction
 - Neuroma excision.

Materials and Methods

- A medial skin incision was utilized followed by a lenticular capsular incision in all cases (*Figure 1*). A limited, trans articular, fibular sesamoid release is performed through the joint utilizing a #64 blade. A distally placed osteotomy guide is used to facilitate three separate bone cuts in the first metatarsal. The apical pin of the osteotomy guide is placed 3-4mm plantar to the dorsal medial surface of the metatarsal head and 1 cm proximal to the articular surface. It is directed in a lateral and plantar direction of about 25-30 degrees. The osteotomy guide is used to create the long axis of the scarf cut (*Figure 2*). This portion of the osteotomy should extend proximally to approximately 2.0cm distal to the 1st-met cuneiform joint and end about 3-4mm above the plantar cortex. The most distal cut is fashioned next at about 5mm proximal to the dorsal cartilage and at an angle of 60-70 degrees to the long axis of the osteotomy. **This portion of the cut must be maintained in the cancellous bone to avoid troughing** following translocation of the capital-shaft fragment (*Figure 3*). The final proximal cut is performed at an angle of 60 degrees to the long osteotomy cut. Once there is movement between the two bone segments, the capital-shaft fragment is then translated laterally (up to 15 mm) and when appropriate correction is achieved, it is held in place with a Scarf clamp. Two threaded head compression screws are then used to fixate the osteotomy (*Figure 4*). The medial eminence is then removed and the dorsal medial aspect of the metatarsal head is then smoothed with a rotary burr. If necessary, at this time, an Akin osteotomy is performed to address hallux abductus interphalangeus deformity. Capsuloplasty is then performed with 2.0 Vicryl suture at proper tensioning. The skin is then closed with 5.0 Vicryl in a running subcuticular fashion. One-half inch Steri-strips are applied to augment the closure. Additional procedures were performed on patients at this time to address concomitant deformities.



Figure 1

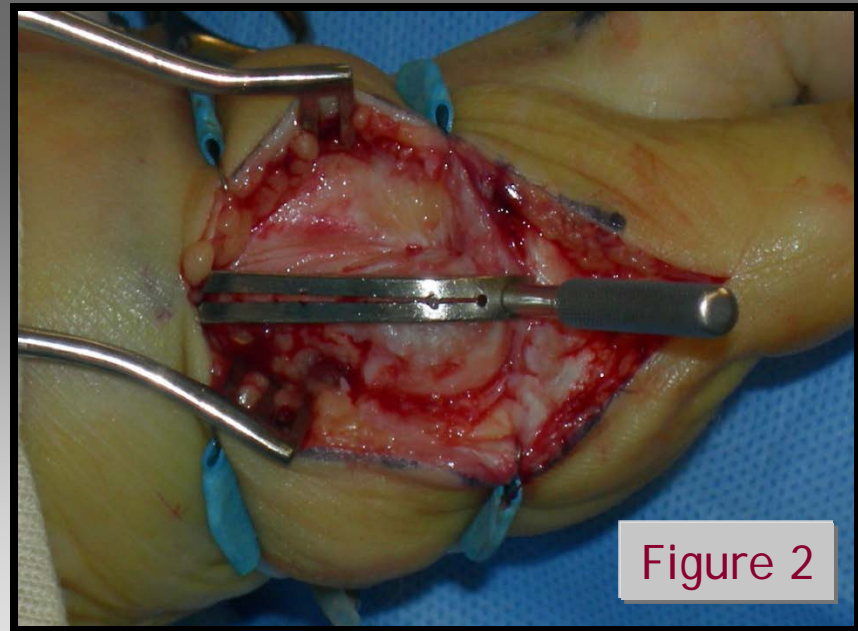


Figure 2

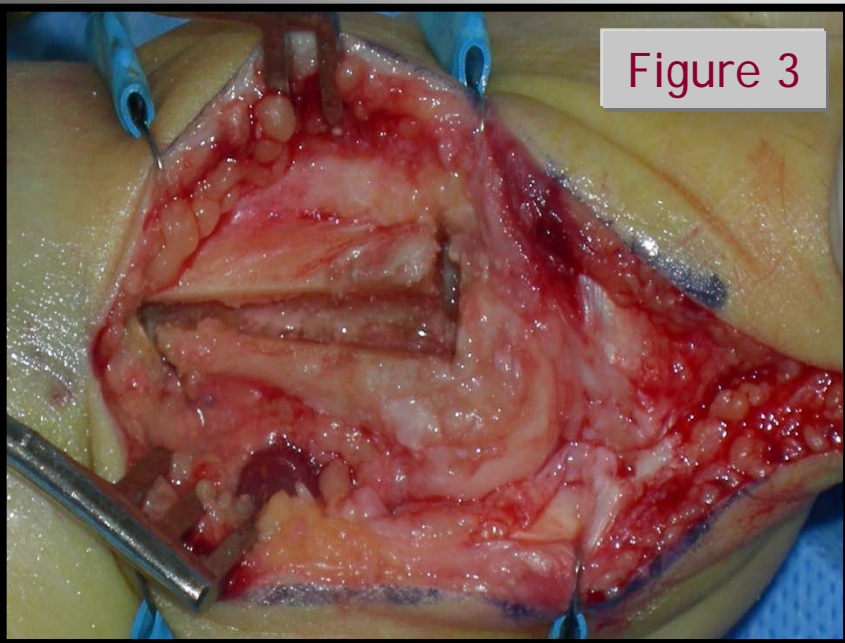


Figure 3

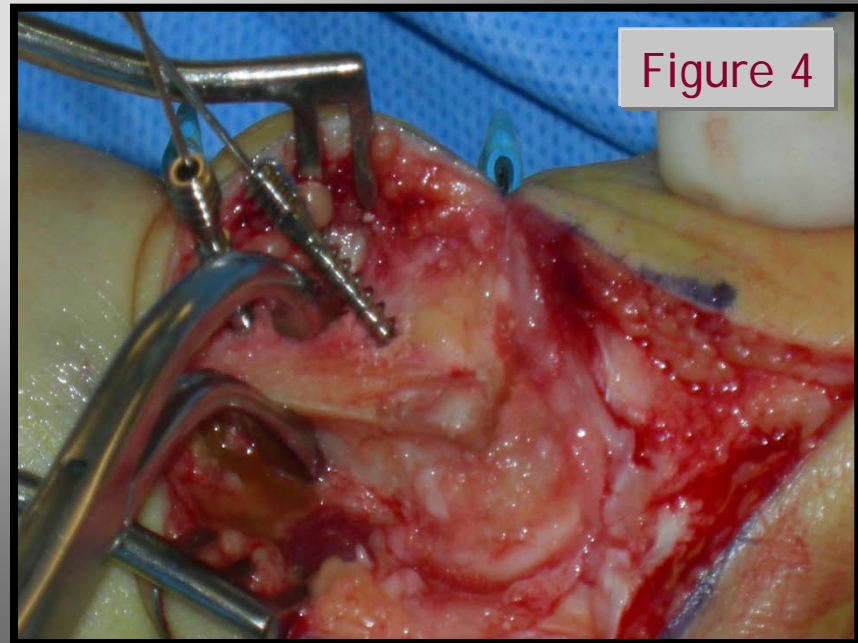
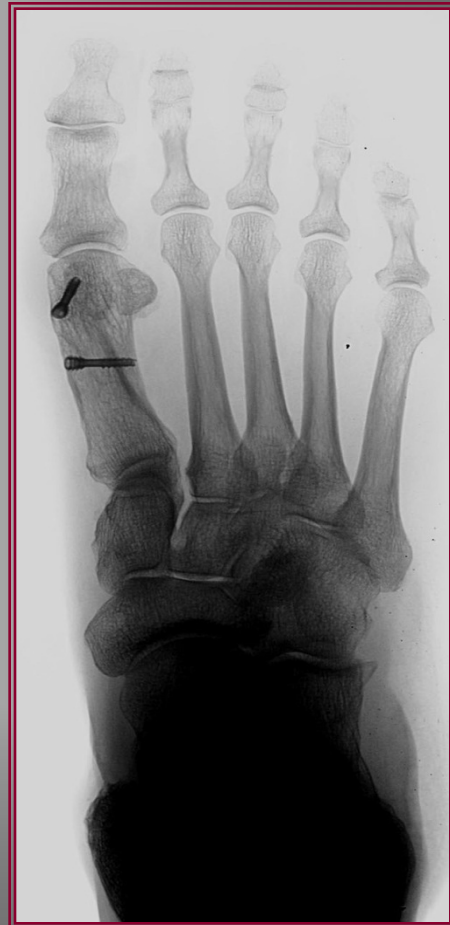


Figure 4



Materials and Methods

Post-op

- A bulky compression bandage and weight-bearing as tolerated in a post-op shoe for 7-10 days
- Patients then transitioned into pre operative athletic shoe after the first post-op visit (7-10 days)
- Physical therapy started emphasizing exercises to promote plantarflexion and strength of the 1st metatarsophalangeal joint (7-10 days P/S)

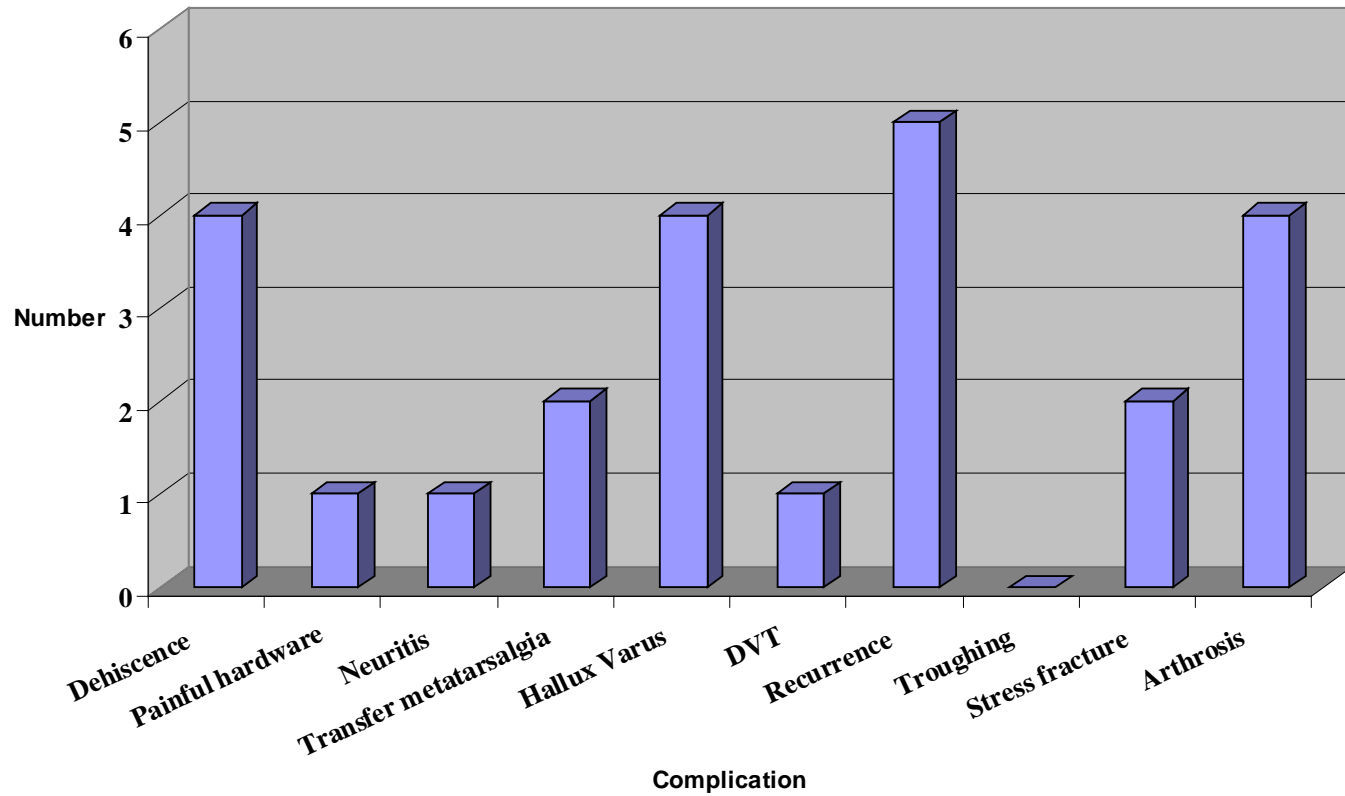
Results

Between October 7, 2002 and August 31, 2006, 73 patients, 65 or older, were reviewed following Scarf Bunionectomy.

RESULTS

- 6 men (7 feet, 6 Left, 1 Right) and 67 women (87 feet, 20 Bilateral, 22 Left, 25 Right)
- Average age of 70 (65 to 81)
- Return to daily activities required 6 to 8 weeks
- 69 feet (73.4%) had no complications during the postoperative course
- 24 complications occurred in 23 feet and included (*Chart 1*):
 - 5 feet with recurrence of deformity (5.3%); did not require revision
 - 4 feet with minor dehiscence (4.3%); healed uneventfully with local wound care
 - 4 feet with hallux varus (4.3%); 2 required additional surgery to correct the deformity
 - 4 feet with arthrosis (4.3%); 2 required manipulation, no revisional surgery
 - 2 feet with stress fractures (2.1%); which healed with immobilization as demonstrated on radiographs without mal-alignment
 - 2 feet with transient transfer metatarsalgia (2.1%); during the early postoperative course and resolved after a normalized gait pattern without operative intervention.
 - 1 foot with neuritis (1.1%)
 - 1 foot with retained painful hardware (1.1%); underwent removal of the distal screw
 - One patient was diagnosed with a DVT postoperatively (1.1%) that resolved with outpatient therapy
- **Although troughing is noted within the literature in association with the Scarf osteotomy⁵, we had no incidence of this complication in our series. There were no infections noted in our patient series.**

Complications



Discussion and Conclusion

- Hallux Valgus reconstructive surgery is not without complication regardless of the procedure performed. Whether distal, shaft, base, or fusion procedures are performed, there are many factors which play a role in short and long term outcomes. Careful consideration should be taken in patient selection.
- The Scarf procedure is a technically demanding procedure which requires a large learning curve.
- Our results indicate that the Scarf procedure, in the population greater than 65 years old, is a viable alternative and did not yield a higher complication rate than those reported in the literature in younger populations.
- While the fear of troughing is often referenced as a contraindication of the Scarf procedure in an older population, we did not encounter troughing in our study from 2002 -2006 on 94 feet in an over 65 year old population.
- Careful attention to the technical performance of the Scarf may eliminate this reported complication.

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