AAFAS Case Study: Iatrogenic Hallux Varus Deformity of the Left Foot

By Sheldon Nadal DPM

On June 4, 2014 I had the pleasure of performing foot surgery for a lovely 65-year-old lady with the chief complaint of difficulty in fitting shoes secondary to an iatrogenic hallux varus deformity of the left foot.

Based on the preoperative x-rays, it appears that the following factors may have contributed to the development of the deformity:

1) Excessive lengthening of the first metatarsal due to an opening base wedge procedure, resulting in a negative intermetatarsal angle.

2) Excessive remodeling of the medial aspect of the first metatarsal head along with excessive tightening of the medial capsule of the first MPJ.

3) It appears that the fibular sesamoid was resected. This also may have been contributory.

Rather than resecting the first MPJ and fusing it or replacing it with an implant, I proposed that a minimally invasive procedure be performed. This could allow the patient to experience less postoperative pain and swelling, allow her to ambulate as quickly as possible, preserve what was left of the joint and reduce the chance of complications associated with joint destructive procedures.

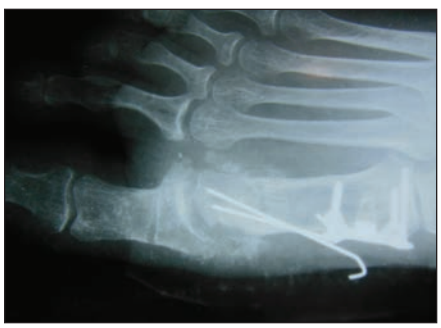
The procedures that I chose were a reverse Reverdin-Isham osteotomy of the first metatarsal head and a reverse Aiken osteotomy of the proximal phalanx of the great toe.

A Reverdin-Isham osteotomy is similar to the Reverdin procedure in that it is a wedge shaped osteotomy in the head of the first metatarsal with the base of the osteotomy at the medial aspect of the head. However, the Reverdin-Isham is anglulated from dorsal distal (just proximal to the articular cartilage of the head of the metatarsal)


Pre-op


Pre-op


Immediate post-op




Immediate post-op

AAFAS *(continued)*

Three-month post-op

to plantar proximal (just proximal to the sesamoid apparatus).

With a reverse Reverdin-Isham, the base of the osteotomy is lateral and the apex is medial.

The procedures were performed using an ankle block without epinephrine and without the use of a tourniquet.

It was first necessary to remodel the lateral aspect of the head of the first metatarsal, since the head was already displaced laterally by the opening base wedge and because the reverse Reverdin-Isham osteotomy would also rotate the head laterally. This was performed through an incision at the dorsal lateral aspect of the head of the first metatarsal which was approximately the width of a 15 blade. The lateral aspect of the head was remodeled using a 2mm Shannon 44 burr and a 3mm wedge burr.

A second incision using a 15 blade was then made at the dorsal medial aspect of the first metatarsal head where a pilot hole or failsafe hole was made using a 2 mm Shannon 44 burr. The pilot hole was made from dorsal distal to plantar proximal just lateral to the medial cortex of the head of the metatarsal. The osteotomy was then performed through the pilot hole and was extended laterally so that the pilot hole formed the apex of the wedge osteotomy and the base was at and through the lateral cortex. The wedge was then closed manually using the great toe as a fulcrum and the osteotomy was fixated with two percutaneous K wires.

With a reverse Reverdin-Isham, the base of the osteotomy is lateral and the apex is medial.

A third incision was then made at the dorsal medial aspect of the proximal phalanx, just distal to the base. The apex of the osteotomy was created just lateral to the medial cortex and just distal to the base of the proximal phalanx using a short Shannon 44 burr. The osteotomy was then carried laterally so that the base of the wedge was at and through the lateral cortex of the proximal phalanx. This osteotomy was not fixated.

A sterile dressing was then applied in order to hold the great toe and first metatarsal head in proper position. The patient was given a prescription for Naprosyn E-500 for post-operative discomfort. The dressing was changed weekly in my office and was discontinued after six weeks. The K wires were removed after three weeks, at which point the patient was instructed to begin range of motion exercises.

The patient was seen most recently on September 10, 2014. She was doing quite well.

She has since been out of the country and will be returning in February for a follow-up visit.

To hear more details of this and other minimally invasive foot surgery procedures, please attend the Academy of Ambulatory Foot and Ankle Surgery Scientific meeting June 11-13, 2015 in New Orleans. For more information visit www.aafas.org or *click here.*

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