

Chevron Bunionectomy

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CASE STUDY: EasyClip™ SI SuperElastic™ Compression Device Fixation For The Classic Chevron Bunionectomy

Abstract

The Chevron bunionectomy has proven to be a safe and effective repair for moderate hallux valgus. Fixation was modified by using the EasyClip™ SI (www.mmi-usa.com) compression device as an alternative to commonly performed screw fixation. The EasyClip™ SI compression device afforded the surgeon a very low profile, constant compression across a more distally placed osteotomy in faster healing cancellous bone, easy insertion and faster surgical time.

Patient History

A 37 year old female presented for elective repair of her painful hallux valgus deformity. Preoperative history and physical and a complete surgical discussion with the patient was performed.

PROCEDURE

The Chevron bunionectomy was performed under intravenous sedation and local anesthesia. A pneumatic tourniquet was applied to the right ankle and elevated to 250mm of mercury. The foot was prepped and draped in the usual sterile manner.



Figure 1a

Figure 1b

Patented forceps that provide a secure hold and a stop to allow the correct angle for insertion.

A 6.0cm dorsolateral incision was made over the first metatarsal phalangeal joint of the right foot medial to extensor hallucis longus.



Figure 2

A linear capsulotomy was performed exposing the dorsomedial eminence of the first metatarsal. The prominent portions of bone were resected and all rough bone edges were smoothed. A classic lateral release was performed so as to neutralize the deforming soft tissue forces on the great toe. A 60 degree V-shaped osteotomy was performed from medial to lateral in the capital fragment of the first metatarsal with a power sagittal saw. The capital fragment was transposed laterally and temporarily fixated with a 0.062 Kwire.

The 18mm wide double-holed EasyClip™ SI template/drill guide was centered over the dorsal first metatarsal osteotomy site and a 2.0mm drill was used to prepare the canals for the 18mm EasyClip™ SI compression device. After each drill hole was completed the 2mm post provided was used to maintain and identify each drill hole. After measurement with a depth gauge an 18mm wide by 14mm long compression device was loaded on the provided forceps. The forceps (Figure 1a) is used to preload and diverge the legs of the compression device. The compression device is then inserted into the predrilled holes in the first metatarsal with one leg anterior and one leg posterior to the osteotomy site. When the forceps is released (Figure 1b) the legs of the

compression device converge and afford compression across the osteotomy. This procedure was then repeated to insert a similarly sized second compression device just medial to the first. The compression devices were seated flush (Figure 2) with the first metatarsal dorsal surface with a tamp.



Figure 3a



Figure 3b

C-arm imaging (Figure 3a & 3b) was used to confirm adequate alignment and fixation. The medial overhang of first metatarsal was removed. Deep and superficial closure was followed with a sterile dressing and the tourniquet was deflated.

RESULTS

The patient followed a typical post-operative course for Chevron bunionectomy. She was ambulatory in a surgical shoe and progressed to normal foot gear over the next 8 weeks. There were no complications.

DISCUSSION

The EasyClip™ SI SuperElastic™ compression device offers a fast and easy alternative to other forms of fixation of the Chevron bunionectomy. The EasyClip™



Figure 4

SI compression device offers compression due to its spring-loaded shape and elastic memory.

The EasyClip™ SI compression device is a memory alloy (Nitinol) that is stored at room temperature. This device offers several advantages over screw fixation. It is low profile, offers faster and simpler instrumentation and is easy to retrieve and reposition if the first placement is unsatisfactory. The original chevron bunionectomy has been modified in recent years with a long dorsal arm that extends into more proximal diaphyseal bone to accommodate screw design and fixation. The shape and low relief of the EasyClip™ SI compression device allows the surgeon to perform the osteotomy (Figure 4) in more distal, faster healing cancellous bone under compression.

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