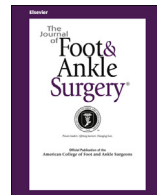


Contents lists available at [ScienceDirect](#)

The Journal of Foot & Ankle Surgery

journal homepage: www.jfas.org

Original Research

Preliminary Results and Learning Curve of the Minimally Invasive Chevron Akin Operation for Hallux Valgus

Charlie R.J. Jowett, FRCS(Orth)¹, Harvinder S. Bedi, FRACS²¹Foot and Ankle Fellow, The Alfred Hospital, Melbourne, Victoria, Australia²Consultant Orthopaedic Surgeon, OrthoSport Victoria, Richmond, Victoria, Australia

ARTICLE INFO

Level of Clinical Evidence: 4

Keywords:

bunion
hallux valgus
metatarsal
minimally invasive
osteotomy

ABSTRACT

Minimally invasive surgery is increasing in popularity. It is relevant in hallux valgus surgery owing to the potential for reduced disruption of the soft tissues and improved wound healing. We present our results and assess the learning curve of the minimally invasive Chevron Akin operation for hallux valgus. A total of 120 consecutive feet underwent minimally invasive Chevron Akin for symptomatic hallux valgus, of which 14 were excluded. They were followed up for a mean of 25 (range 18 to 38) months. The patients were clinically assessed using the American Orthopaedic Foot and Ankle Society score. Complications and patient satisfaction were recorded. The radiographs were analyzed and measurements recorded for hallux valgus and intermetatarsal angle correction. The mean age of the patients undergoing surgery was 55 (range 25 to 81) years. Of the 78 patients, 76 were female and 2 were male; 28 cases were bilateral. The mean American Orthopaedic Foot and Ankle Society score improved from 56 (range 23 to 76) preoperatively to 87 (range 50 to 100) postoperatively ($p < .001$). The mean hallux valgus and intermetatarsal angles preoperatively were 29.7° (range 12° to 46°) and 14.0° (range 8° to 20°). The corresponding postoperative angles were 10.3° (range 0° to 25°) and 7.6° (range 3° to 15°; $p < .001$). The patients were satisfied with the results of surgery in 87% of cases (92 of 106). The reoperation rate was 14% (15 of 106). These are the only reported results for this technique. They display a steep associated learning curve. However, the results are promising, and the learning curve is comparable to that for open hallux valgus surgery.

© 2017 by the American College of Foot and Ankle Surgeons. All rights reserved.

Minimally invasive surgery is increasing in popularity and being adopted in all surgical specialties. The main advantage appears to be preservation of soft tissues. This in theory leads to reduced recovery and rehabilitation times, decreasing the morbidity associated with the disease process and the operative intervention. This has added benefits in hallux valgus surgery because wound healing can be problematic (1).

The earliest reports of surgical hallux valgus correction date back to Gernet in 1836. Since then, well over 150 different techniques have been described (2). Ferrari (3) reported a systematic review in 2002 and concluded no compelling evidence was available to recommend any particular technique over another.

Financial Disclosure: None reported.**Conflict of Interest:** None reported.

C. R. J. Jowett's current address is York Hospital, Wigginton Road, York, North Yorkshire, YO31 8HE, United Kingdom.

Address correspondence to: Charlie R.J. Jowett, FRCS(Orth), York Hospital, Wigginton Road, York, North Yorkshire, YO31 8HE, UK.

E-mail address: charliejowett@hotmail.com (C.R.J. Jowett).

The reported complications of open hallux valgus surgery include stiffness, pain related to the soft tissues, fracture, under- and over-correction, problems with wound healing, nonunion, prominent hardware, recurrence, transfer metatarsalgia, troughing, and metatarsal head necrosis (4–7).

Complications arising from the early techniques of minimally invasive hallux valgus surgery have included metatarsal shortening, noncongruence of the first metatarsophalangeal joint, dorsal malalignment, recurrence, and inadequate fixation of the osteotomy (8–10). The variety of procedures described in published studies and the lack of any universally agreed reference standard has led to a continuing search to find the optimum operation.

The first reports of minimally invasive techniques for hallux valgus surgery date back to the 1940s when podiatrists in the United States used these methods (11). Bosch et al (12) subsequently developed the subcapital osteotomy technique, which is the basis from which all percutaneous techniques were later developed. More recently, Vernois and Redfern (13) further developed minimally invasive hallux valgus surgery, with the aim of causing minimal disruption to the soft tissues and stable fixation of the osteotomy.



Fig. 1. Instruments from left to right. Guidewire, cannulated drill (long and short), 20-mm Shannon burr (Chevron), 12-mm Shannon burr (Akin), bone rasp, curved and straight periosteal, and cannulated screwdriver.

They now advocate minimally invasive Chevron Akin (MICA) for hallux valgus correction.

In Australia, >1500 MICA procedures have been performed since 2011, and in Europe, the numbers are far greater. Despite this, no outcomes of the technique have been reported. The aim of our study was to critique the clinical and radiologic results of a single-surgeon series of the latest MICA technique and to assess the extent of the learning curve.

Patients and Materials

A prospective, consecutive single-surgeon case series by the senior author (H.S.B.) of his first 120 MICA procedures was performed. These were divided into 2 groups for clinical and radiologic follow-up (group A included feet 1 to 60 and group B included feet 61 to 120). Any patients suitable for surgical correction of hallux valgus were included. The severity of the deformity did not influence the surgical technique used. All patients suitable for surgical treatment of hallux valgus were offered either the open or MICA technique. No specific exclusion criteria were in place. The patients undergoing MICA who also underwent surgery on the corresponding lesser metatarsals were removed from the study in an attempt to remove bias. After excluding the feet that had undergone surgery on the lesser metatarsals, 106 MICA procedures were included (53 each in groups A and B). All patients had undergone surgery from January 2012 to March 2014. They all had symptomatic hallux valgus that had failed conservative



Fig. 2. Intraoperative anteroposterior radiograph showing Shannon burr creating the osteotomy.



Fig. 3. Lateral radiograph after completion of the Chevron osteotomy.



Fig. 4. Intraoperative photograph of minimally invasive Chevron osteotomy.

Download English Version:

<https://daneshyari.com/en/article/5576017>

Download Persian Version:

<https://daneshyari.com/article/5576017>

[Daneshyari.com](https://daneshyari.com)