

Modified Blair ankle fusion for ankle arthritis

Wang Shuangli*, Huang Zhang, Xiong Gaoxin, Chen Guang, Yin Zhongxiang, Jiang Hua

【Abstract】 Objective: To investigate the clinical outcome of modified Blair ankle fusion for ankle arthritis.

Methods: Between November 2009 and June 2012, 28 patients with ankle arthritis were treated, among whom 11 had obvious foot varus deformity, and 17 were almost normal in appearance. There were 13 males and 15 females with an average age of 49.4 years (range, 23-67 years). The main symptoms included swelling, pain, and a limited range of motion of the ankles. The ankle joints functions were assessed by American Orthopedic Foot and Ankle Society (AOFAS) ankle and hindfoot score and visual analog scale (VAS) preoperatively and at 1 year follow-up.

Results: Twenty-eight patients were followed up for 19.8 months on average (range, 1-2 years). Superficial wound infection occurred in 3 cases, and was cured after debridement; the other incisions healed by first

intention without complications. All ankles were fused at 1 year follow-up after operation. The symptom was relieved completely in all patients at last follow-up without complication of implant failure, or nonunion. The postoperative AOFAS ankle and hindfoot score was 83.13 ± 3.76 , showing significant difference when compared with the preoperative score (45.38 ± 3.21 , $P < 0.01$). VAS was significantly decreased from 8.01 ± 0.63 to 2.31 ± 1.05 at 1 year follow-up ($P < 0.05$).

Conclusion: Modified Blair ankle fusion has the advantages of high feasibility, less cost and rigid fixation. It shows high reliability in pain relief and may obtain a good clinical effectiveness.

Key words: Ankle; Arthritis; Arthrodesis; Fracture fixation, intramedullary

Chin J Traumatol 2014;17(3):136-140

For treatment of end-stage ankle arthritis, especially posttraumatic arthritis, conservative therapy is generally accepted. However, surgical operation such as total joint replacement and ankle fusion exerts better effects on pain release, gait improvement, and joint function reconstruction. It remains controversial whether the end-stage ankle arthritis should be treated with total ankle replacement or ankle fusion. More and more attention has been paid to the operative curative effects and related complications.^{1,2} The present study analyzed the clinical data of 28 cases undergoing modified Blair ankle fusion for ankle arthritis.

METHODS

Subjects

From November 2009 to June 2012, 28 patients

who underwent modified Blair ankle fusion in Department of Orthopedics of the Third Affiliated Hospital of Anhui Medical University were recruited for this retrospective study. Ankle arthritis was confirmed by anteroposterior and lateral X-ray and CT prior to surgery. Among these patients, 9 suffered from posttraumatic arthritis, 12 osteoarthritis (Figure 1), 5 rheumatic arthritis and 2 others. All patients complained of ankle joint pain and different degrees of swelling as well as limited motion of joint. Informed consent was obtained according to the Administrative Regulations on Medical Institution, issued by State Council of China. The treatment protocols were approved by the Ethics Committee of our hospital.

Materials

Hollow screws and Steinmann pin were purchased from Changzhou Huasheng Medical Instrument Limited Company (batch number 1203182). It was made of titanium alloy materials, with good histocompatibility and minimal rejection.

DOI: 10.3760/cma.j.issn.1008-1275.2014.03.003

Department of Orthopedics, Third Affiliated Hospital, Anhui Medical University, Hefei 230061, China (Wang SL, Huang Z, Xiong GX, Chen G, Yin ZX, Jiang H)

*Corresponding author: Tel: 86-15955109881, Email: wangshuangli@aliyun.com

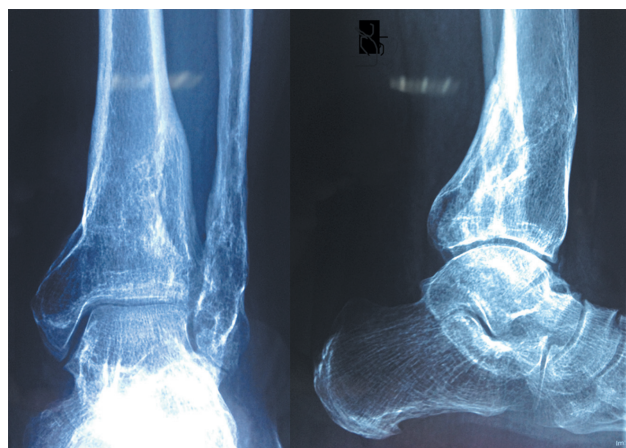


Figure 1. Preoperative anteroposterior and lateral X-ray film showing osteoarthritis.

Operation

Under epidural anesthesia or general anesthesia, the patients were fixed in supine position. With the proximal end of affected limb tied with tourniquet, an anterior longitudinal incision was made beginning at 8 cm proximal to the ankle and ending at the medial cuneiform. Dissection through the interval between the extensor hallucis longus and extensor digitorum longus, and retracting the neurovascular bundle medially were made. The capsule and periosteum were incised in line with the skin incision. Lamellar articular cartilage was resected on tibia and talus. A rectangle 5.0 cm×2.5 cm from the anterior aspect of the distal tibia was cut using a power saw. A transverse groove 2 cm deep in the superior aspect of the talar neck was made, then the tibial graft was slid into it. The foot was held in 0 degree of dorsiflexion, 5 degrees of valgus, and 10 degrees of external rotation,³ and the proximal part of the graft was fixed to the tibia with two or three hollow screws, followed by a Steinmann pin inserted vertically through the calcaneus and 3 to 10 cm into the distal tibia for added stability (Figure 2). Finally cancellous bone grafts were packed around the fusion site. Anterior ankle muscle retinaculum was repaired and the incision was closed after drain tube was placed in situ. Ankle joint was fixed in the neutral position using short leg plaster slab. After releasing the tourniquet, blood supply in the toes was closely monitored.

Postoperative treatment

Immediately after surgery, isometric contraction trainings should be performed in the leg on the

surgical side which should be elevated to facilitate extinction of dropsy in the surgical region. The patients were subjected to antibiotic treatment for 1 day. The drainage tube was withdrawn 1-2 days postoperatively. Blood supply at the toe tip and the condition of wound healing were observed. The Steinmann pin was removed 6 weeks after operation. The short leg plaster slab was retained for 3 months. After removal of plaster slab, partial weight bearing walk should be performed to strengthen legs. Bony fusion was assessed by follow-up X-rays.



Figure 2. Steinmann pin position during operation.

Functional assessment

Ankle function was assessed using visual analog score (VAS), American Orthopedic Foot and Ankle Society (AOFAS) ankle and hindfoot score, preoperatively and at 1 year follow-up.

Statistical analysis

Statistical analysis was performed using SPSS 13.0 medical software package. Data were analyzed with *t*-test. *P*<0.05 was considered statistically significant.

RESULTS

The follow-up period ranged from 1 to 2 years, averaged 19.8 months (Figures 3 and 4). Clinical data of patients are listed in Table 1.

Treatment outcomes

The time for bony union on X-rays was 12 weeks on average, and no patients failed to bony union 1

Download English Version:

<https://daneshyari.com/en/article/3107567>

Download Persian Version:

<https://daneshyari.com/article/3107567>

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