

Foot and Ankle in 2017: Some Questions Answered?

Pradeep Moonot¹

Abstract

There are many ways in which a condition can be treated, especially in the foot and ankle speciality. There are also many queries and controversies in this field on various topics like tendoachilles tear, isolated lateral malleolus fracture, flat foot surgery, Mortons neuroma, gastrocnemius tightness, etc. I hope to answer some of the queries and suggest an update in the present article.

Background

Treatment of Chronic rupture of Tendoachilles:

In India there are numerous patients which present late with tendoachilles (TA) rupture either because of neglect or due to misdiagnosis. These patients present with disability involving activities of daily living or a limp. Various surgical procedures have been reported for the reconstruction of a chronic Achilles tendon rupture; these involve resection of the interposed scar tissue and reconstruction using normal autologous tissue. Although these reconstructive surgical procedures have been shown to have good clinical results, they are time-consuming and difficult to perform compared with primary repair. In addition, procedures involving the use of a normal autologous tendon are associated with donor-site morbidity. Yasuda et al¹ studied the direct repair of chronic TA

rupture using the scar tissue in 30 patients (30 feet). In 27 patients, the duration from injury to the time of the surgical procedure was >12 weeks, and the mean duration was 22 weeks.

Surgical technique: After the midline longitudinal incision, the scar and tendon tissue was inspected. The middle part of the scar tissue located between the tendon stumps was resected. After the resection, the approximation of the proximal and distal ends of the tendon was possible with the ankle in 200 to 300 of plantar flexion. If needed, the additional scar tissue was resected.

The results showed significant improvement in the AOFAS scores. At the time of the latest follow-up (minimum 24 months), none of the patients had experienced tendon ruptures or difficulties in walking or climbing stairs, and all except 2 patients could perform a single-limb heel rise.

All athletes had returned to their pre-injury level of sports participation. Histologically, the interposed scar tissue consisted of dense collagen fibers.

In conclusion, shortening of the tissue between the 2 tendon ends that included healing scar and direct repair of healing tendon

without allograft or autograft can be effective for treatment-delayed or neglected Achilles tendon rupture.

Surgery for Flat foot in adults. Does it help?

Adult acquired flatfoot deformity (AAFD) could result in a painful progressive plano-valgus deformity. The most common cause of AAFD is posterior tibial tendon dysfunction (PTTD), which involves pathology of the posterior tibial tendon (PTT) and the spring ligament. In the initial flexible stage (Type II AAFD) shoe modification, orthosis and physiotherapy is helpful. Surgery becomes an option after failed non-surgical treatment. There are less than 20 published studies that evaluate the outcome of this type of surgery, most are small retrospective investigations with only postoperative data presented and only few use a prospective design. Coster et al evaluated 21 patients with a median age of 60 (range 37–72) years who underwent different surgical reconstructions due to stage II AAFD before and 6 and 24 months after surgery by the multiple patient questionnaires.

The surgical procedures varied but included medial displacement calcaneal

¹Breach Candy Hospital, Mumbai, India

Address of Correspondence

Dr Pradeep Moonot
Orthopaedic Surgeon & Specialist in Knee, Foot and Ankle Surgery, Breach Candy Hospital, Mumbai
Sir H N Reliance Foundation Hospital, Wockhardt Hospital, Bombay Central, S L Raheja Fortis Hospital, Mahim, Hinduja Khar Hospital, Nanavati Multispecialty Hospital, Criticare Hospital, Juhu
Email: drmoonot@gmail.com

osteotomy, FDL tendon transfer, spring ligament reconstruction, lateral column lengthening and gastrocnemius recession.

Before surgery the patients completed multiple scores which included SF-36 and Euroqol. The participants were before surgery markedly impaired in function and HrQoL and had substantial pain. All scores improved after surgery, with statistically significant improvement found from preoperative to 6 months after surgery. Three patients had severe but flexible flat foot deformities which required fusion. These patients also did well. This study shows that surgery of AFFD due to PTTD results in improved pain, function and HrQoL. The high subjective satisfaction rate and the low complication rate support the usefulness of surgery in this condition. The improvement can take up to 2 years after surgery.

Is Gastrocnemius recession the answer to foot pain?

Isolated gastrocnemius contracture (IGC) is considered an etiologic factor for various complex foot diseases and symptoms such as hallux valgus, acquired flatfoot, hammertoe deformity, and plantar fasciitis. Holtmann et al³ studied the effect of IGC release in 64 neurologically healthy patients. The prevalence of foot disorders were pes

planus (41%), hallux valgus (38%), metatarsalgia (19%), hammertoe deformity (13%), and symptomatic Haglund exostosis (11%). At a follow up period of 31 months, the patients had significantly benefited from increased ankle dorsiflexion. This resulted in improvement of the symptoms of pain and increase in the daily life functionality and patient satisfaction. Special attention is needed to identify the sural nerve as it is at risk during surgery. Early physiotherapy and muscle training is required to regain the strength.

Use of PRP in Foot and Ankle:

In recent years, the musculoskeletal benefits of PRP have been the focus of considerable interest, most notably in sports medicine and orthopedics. Most of the published data on PRP have focused on its effectiveness to treat degenerative tendinopathy or early-stage knee chondropathy and arthritis. Repetto et al⁴ retrospectively evaluated the mid- to long-term clinical results (mean follow-up of 17.7 months) for platelet-rich plasma injections in 20 patients (20 ankles) with ankle osteoarthritis. They found a strong positive effect for 4 platelet-rich plasma injections (injected once a week) on pain and function, with 80% of patients very satisfied and satisfied, and only 2 patients (10%) required surgery

because of early treatment failure. These results suggest that the use of platelet-rich plasma injection is a valid and safe alternative to postpone the need for surgery.

Alviti et al⁵ studied the use of PRP matrix in acute rupture of the Achilles Tendon (ATR). They analysed the biomechanical characteristics, stiffness, and mechanical work of the ankle during walking in patients who had undergone surgery after ATR with and without PRF augmentation in 20 patients. A gait analysis evaluation was performed at 6 months after surgery. The percentage of the stance time of the operated leg, double-support time of the healthy leg, and net work of the ankle during the gait cycle showed statistically significant differences between the no-PRF and the healthy group ($p < .005$). This may be due to a reduction of the effectiveness of the muscle work related to a weakness of the elongation and elastic return of the Achilles tendon during walking. There were no differences between the PRF and healthy groups. Treatment with suture and PRF augmentation could result in significant functional improvements in term of efficiency of motion.

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