

Original

**TWO STAGE SURGERY FOR TREATMENT OF
NEGLECTED CLUB FOOT**

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A two stage surgery was carried out on 35 feet belonging to 24 patients (17 males, 7 females) with neglected talipes equinus varus. The ages of the patients ranged from 16 to 26 years old.

The first stage was postero-medial soft tissue release, while the second stage was triple arthrodesis. The protocol of the procedure was described. Almost all patients were happy following this procedure.

Our aim is to present our experience in two staged surgery for the treatment of neglected talipes equinovarus.

Neglected talipes equinovarus (club foot) is not uncommon¹. The treatment, causes and pathological anatomy of club foot remain controversial².

The aim of treatment is to obtain functional, mobile and plantigrade foot³. This can be achieved if proper treatment is initiated at an early stage but the problem is with the foot which is either untreated or inadequately treated at the proper time due to the fixed deformity which occurs with time⁴.

To overcome this deformity, bone surgery alone in addition to soft tissue surgery should be done^{5,6}. This type of surgery is not easy and has complications including recurrence of the deformity, pseudoarthrosis, avascular necrosis and flattening of talus, pain, instability and degenerative joint changes⁷.

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Our aim is to present our experience in two stage procedure in the treatment of neglected club foot.

METHODS

A study of 24 patients (35 feet) who had 2 stage surgery for the correction of neglected talipes equinus varus done in Riyadh Central Hospital between 1980 to 1992. Patient who had previous surgery were excluded from this study.

There were 17 males and 7 females with the age range from 16 to 26 years old (mean 18 years old). Pre-operative assessment included clinical examination, functional abilities, cosmetic appearance and radiological examination.

All patients had two stage surgery. The first stage includes extensive postero-medial soft tissue release as described by Turcol⁶, above knee plaster with the foot and ankle in slightly under corrected position and knee in 30o flexion. At the second stage, which is carried out after 3 weeks, triple arthrodesis was done, followed by below knee plaster with full correction at the ankle and foot.

After 8 weeks of the second stage operation, a walking heal was added to the plaster and patient was allowed to put weight for another 8 weeks.

When arthrodesis was confirmed by clinical and radiological examination the plaster was removed. Then the patients were allowed weight bearing initially with elbow crutches and gradually without any walking aid.

Follow-up ranged from 3 to 11 years (mean 6 years).

RESULTS

Table 1 shows that almost all patients were happy about the appearance of foot. Two patients developed superficial wound infection which resolved with antibiotics. One patient (both feet) required revision of arthrodesis due to persistent pain secondary to pseudoarthrosis. Residual equinus deformities which was compensated by shoe raising was seen in one patient. Persistent oedema and swelling of both feet seen in one patient.

Table 1: Result/Number of patient and feet

		Patient	Feet
Good	No pain	17	23
	No residual deformity		
	No instability		
	Wear normal shoes		
Fair	Pain with prolonged walking	4	6
	No residual deformity		
	No instability		
	Wear normal shoes		
Bad	Pain need revision of surgery	1	2
	Residual deformity	1	2
	Pus oedema	1	2

Figures 1,2, and 3 show the bilateral deformaties before and after two stage correction.

Fig 1

Fig 2

Fig 3

DISCUSSION

Congenital talipes equinovarus is combined varus deformity of the foot, equinus deformity at ankle joint and adduction of forefoot⁸. As the foot attained skeletal maturity these deformities become severe, resistant and rigid⁵. The patient functionally adapt to these deformities but not cosmetically. These in addition to the above make the treatment of this deformity difficult. Therefore it is important to assess the patient psychologically as well as functionally⁵. Angus and Cowell treated 17 patients with triple arthrodesis alone and almost 50% of their patients had bad result due to complications such as recurrence of deformity, avascular necrosis and flattening of talus, skin ulceration, pseudoarthrosis and pain⁵. In our study the results were good when proper two stage procedure were done.

In the first stage extensive postero-medial release including elongation of achilles tendon, posterior capsulotomy of ankle and subtalar joints and release of calcaneo-fibular ligament. Less bone resection from talar neck will be needed to correct the equinus in the second stage. Therefore the anterior tibial branch which is important blood supply to the talus is preserved. When extensive medial soft tissue releases were done, the need for bone resection from subtalar joint area is reduced so the rich subtalar vasculature is not disturbed⁸. For these reasons the incidence of avascular necrosis and flattening of the talus and pseudoarthrosis were less.

In our experience the plaster was kept for 8 weeks followed by another walking type plaster for another 8 weeks. With this prolonged immobilisation and early weight bearing the chance of pseudoarthrosis is reduced.

None of our patient developed skin ulcer and we think the reason is that in the first stage the plaster was applied with the foot slightly under corrected and in the second stage, surgery was done 3 weeks later when the wound completely healed.

Joint arthritis is less because the congruity of the joint is maintained by bony surgery. The same result was reported by Harold and Torok in 1973 who also used two stage procedures with manipulation under general anaesthesia every week before the second stage. Our result showed that there is no need for such manipulation. This is because it became apparent in the preoperative assessment that neglected foot deformity had no further potential for manipulative correction beyond that achieved with the release of contracted soft tissues.

Most of the poor and fair results were among the patients who had bilateral deformity. This occurred despite surgery on one site at a time with the second site being operated on after the return to full weight bearing on first site.

CONCLUSION

We believe the two stage surgery will give better results in the young patients with neglected talipes equinovarus if it is done in two stages and without serial plaster correction, and with no significant surgical complications.

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Figure Legends

Figure 1 Bilateral deformities

Figure 2 After correction of one foot

Figure 3 After correction of both feet