

Outcome Of Acute Correction Of Tibia Vara With Corrective Osteotomy And Locking Compression Plate (LCP)

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INTRODUCTION:

Tibia vara (Blount Disease), a growth disorder of the medial aspect of the proximal tibial physis, with abrupt medial angulation of the proximal tibia, leading to varus angulation and medial rotation of the tibia. Acute or gradual operative correction has been described using both external and internal fixation. This is a retrospective study on the outcome of acute correction in late-onset Blount disease in our centre from 2011 to 2016.

METHODS:

A total of 17 patients with eighteen tibiae managed in a single stage surgery were included in this study. Demographic data was obtained including preoperative tibiofemoral angle (TF), limb-length discrepancy (LLD) and joint laxity. Acute corrective surgery by medial open wedge osteotomy of proximal tibia below tuberosity, distal fragment external rotation with lateral translation and mid fibula osteotomy with 2cm bone excision. Correction temporarily secured with K-wires, mechanical axis checked using image intensifier before stable fixation with Synthes proximal lateral 4.5mm LCP. Average post-operative follow-up for a duration of 13.7 months with serial x-rays was done for the bony union, TF, LLD and joint laxity. Complications such as neurovascular injury, recurrence of tibia vara and wound healing were observed.

RESULTS:

Mean age of surgery time was 12.7, male: female of 15:2. Mean of pre- and post-operative TF and LLD are as shown in Table 1. All patients achieved bony union by a mean of 13.1 weeks. Three patients experienced transient common peroneal nerve palsy; one patient has residual joint laxity.

Table 1 showing the mean value of deformity correction.

Mean Value	TF	LLD
Pre-op	22.95°	1.68cm
Post-op	3.21°	0.05cm
Amount of correction	19.74°	1.63cm

DISCUSSIONS:

Single stage acute corrective surgery in Blount always poses risk of neurovascular injury and compartment syndrome. In our series, there was only 3 out of 17 who presented with transient neuropraxia which may be due to traction injury during fibula osteotomy rather than the tibial correction proper. Residual varus deformity may be due to a larger preoperative TF. There are studies comparing acute and gradual correction. Some prove no significant difference while some concluded that gradual correction with Taylor-spatial frame allows accurate multiplanar correction.

CONCLUSION:

Acute correction of tibia vara with LCP yields a satisfactory clinical outcome without the complication though accurate normal mechanical axis may not be achieved.

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