

THE FUNCTIONAL OUTCOME OF BONE LENGTHENING AND BONE TRANSPORT

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INTRODUCTION:

Osteogenesis by distraction can restore a bone length and has been used as a strategy to fill bone defects in long bones. Bone transport or bone lengthening is widely practiced in reconstructing lower limb with bone loss. This study aimed to evaluate the functional outcomes of the patients who underwent tibial and femur lengthening or bone transport procedures

METHODS:

This was a retrospective study conducted in a tertiary center. 33 patients who had undergone tibial and femur bone transport or lengthening surgeries were recruited. The patients' past medical record, treatment details and radiographic findings were studied and analyzed. The patients' functional outcomes were assessed with Lower Extremities Functional Scale (LEFS) and ASAMI score.

RESULTS:

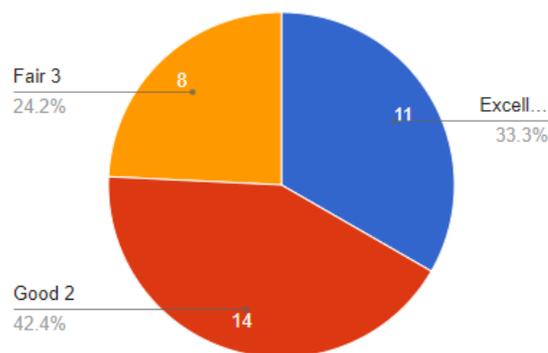
The patients' mean age was 30.1 years old with male predominance. They were followed up for 3.5 years and underwent average 5.4 surgeries. The bones were lengthened for 6.8cm. The mean LEFS was 42.3. The external fixation time, healing index, complications per patient were 17.2months, 2.9 months/cm, and 2.7 respectively. All patients achieved bone union.

Table 1: Comparison of patients with LEFS more than 40 and less than 40:

Factors / Groups	LEFS <40 (n=17)	LEFS ≥40 (n=16)	p value
Age (years)	33.2	26.9	0.06
Final length	6.5	7.2	0.54

lengthened (cm)			
External fixator time (days)	577.2	466.6	0.32
Total No of surgeries during follow up	6.1	4.8	0.09
Healing index (months/cm)	3.3	2.3	0.10
Final Limb Length Discrepancy (cm)	1.2	1.4	0.79

Figure 1: The ASAMI functional class



DISCUSSIONS:

Patients with LEFS score more than 40 had undergone less surgery, shorter external fixator time and faster healing index compared to those scored less than 40, although these difference were not statistically significant. The functional outcome of this study was comparable to others.

CONCLUSION:

Distraction osteogenesis is a useful method to regain the length of the bone as well as functional result.

REFERENCES:

- Binkley JM et. al. *Physical therapy* 1999; 79(4), 371-383.
- Yin P et. al. *PLoS One* 2015; 10(11), e0141973.