Lengthening On A Nail Using LLRS:A Case Series

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Introduction

Limb lengthening and deformity(LLD) correction has been seen to predate since late 1800's, which traditionally is corrected using external fixator devices . That being said, cases for transport and lengthening correction has been observed to have a longer duration of union time using conventional external fixator, compared to a combination with an intramedullary nail(IMN).

Case Series

We report 2 cases whereby lengthening over a nail(LON) using LLRS was done in comparison of time to achieve union.

Patient A, a 23-year-old male treated for an open comminuted supracondylar right femur with medial-condyle fracture. Debridement, screw fixation of condyle and across knee external fixator was done. A complication of delayed union, 6cm shortening was observed at after 6 months with no signs of infection. Proceeded with LON using LLRS. At 10 weeks of surgery, LLRS was removed, complete union achieved within 4 months.

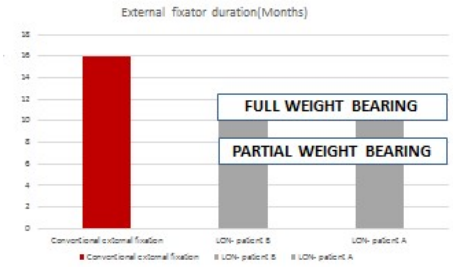
Patient B, a 22-year-old male treated for an open supracondylar left femur fracture, done screw fixation and across knee external fixator . After 1 year, noted to have a malunion with 18º varus deformity and 4cm shortening.

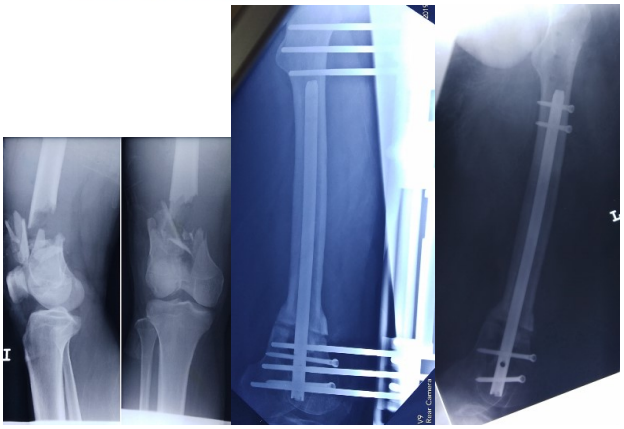
At 10 weeks post LON, LLRS was removed, completed treatment within 3 months post surgery.

Discussion

Combination of External-Fixation with an IMN increases stability of the construct. Traumatic corticotomy with displaced bone ends, poor periosteal circulation, inadequate walking or frame instability are some factors that increases duration of external fixations.

In our case series, we've corrected both angulation and shortening deformity simultaneously and both of our patient had no major complication seen. Usual complication using LON techniques are IMN infection due to proximity to external pins. Patient compliance towards physiotherapy and rehabilitation using crutches, partial and full weight bearing is an advantage, as LON technique allows early removal of external-fixation.





Trauma LON-LLRS ROI of LLRS

Conclusion

Based on our observations, we believe the LON technique significantly reduces external-fixation time while maintaining low rate of complications.

Reference

1. Chaudhary MM, Limb lengthening over a nail can safely reduce the duration of external fixation,Indian J Orthop.2008 Jul-Sep;42(3):323-329.