

Adolescent Forearm Fractures: Is Elastic Stable Intramedullary Nailing A Feasible Treatment Option ?

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INTRODUCTION:

Elastic Stable Intramedullary Nailing (ESIN) and plating have shown good outcome in the paediatric patient population. However, currently there is no clear consensus on the use ESIN fixation for adolescent forearm fractures¹. This study aims to evaluate the clinical and radiographic outcome of ESIN in the adolescent age group.

MATERIALS & METHODS:

A retrospective review was conducted to evaluate the outcome of ESIN treatment in children aged 10 to 17 years old with unilateral, non-comminuted, single or both diaphyseal forearm fractures in our institution between February 2012 and July 2015. Metaphyseal fractures or fractures of the radial head/neck and ipsilateral humerus fractures were excluded from the study

RESULTS:

Thirteen patients were included in the study, of which 10 were boys and 3 were girls with average age of 13.3 years. Nine (69%) patients sustained radius and ulna fractures, three sustained ulna fractures and one sustained radius fracture. Three patients (23%) had grade 1 (Gustilo et al) open fractures. On average, time to union was 8.6 weeks. All fractures were united at 12.4 weeks. All patients had good to excellent forearm rotation at final follow up. Two minor complications were noted. One patient developed superficial radial nerve neuropraxia which resolved with observation and another developed keloid formation.

DISCUSSIONS:

Management of displaced forearm fractures using ESIN has gained popularity recently, mainly due to shorter operative times, reduced scarring and favourable functional outcomes². Furthermore, studies comparing plating and intramedullary nailing in forearm fractures of the adolescent age group has revealed no significant difference in terms of union and

forearm function³. This study describes our experience in using ESIN for forearm fractures in the adolescent age group nearing skeletal maturity. It had reaffirmed our stance that adolescents should not be treated as adults with regards to forearm fractures. Although it is unlikely that ESIN result in anatomical reduction of the radius and ulna, patients in our study showed satisfactory to excellent forearm range of motion. It is possible that we have underestimated the residual potential for fracture remodeling in the adolescent age group.

CONCLUSION:

In conclusion, we found that elastic stable intramedullary nailing is a feasible option in treating forearm fractures in the adolescent age group.

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