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A Study of Functional Outcomes by Using Titanium Elastic Nails System for the Treatment of Femur Shaft Fractures in Children

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Abstract

Background Fractures of the femur are the most incapacitating fractures. For children aged 6-16 years, there is no clear consensus as to the preferred treatment. The conventional treatment of traction and casting is no longer preferred. We report our experience in titanium elastic nailing for the treatment of paediatric femoral diaphyseal fractures. Objectives: To study the functional outcome following the use of flexible titanium nails for femoral shaft fractures in children and to study the duration of the union in the above-mentioned fractures. To study the complications of fracture shaft femoral after intramedullary nailing. **Methods** Thirty patients in the age group of 6-16 years with displaced diaphyseal femoral fractures were stabilized with titanium elastic nails Patients were followed up clinically and radiologically for a minimum period of 6 months to 1 year. The final results were evaluated using Flynn's criteria. Technical difficulties and complications associated with the procedure were also analyzed. **Results:** Overall results were excellent in 28 cases and satisfactory in 02 cases. No patient had a poor result. The average hospital stay was 6.47 days. All the fractures healed in 70 days (10 weeks) of times with an average time of union of 60 days (7.5 weeks). The most common complication encountered was soft tissue irritation at the nail entry site seen in 2 cases. Clinically, shortening was noticed in 3 cases, while no patient had lengthened. Malalignment was seen in only 6 cases. There was no iatrogenic bone injury, delayed injury and non-union, bending or breaking of implant, refracture and avascular necrosis of femoral head. There was no evidence of physeal injury on follow up. **Conclusions:** Titanium elastic nails are relatively easy to use, minimally invasive, physeal-protective implant system with a high rate of good and excellent outcomes in children aged 6-16 years. Technical pitfalls can be eliminated by adhering to the basic principles.