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Ipsilateral Segmental Fracture of Radius and Ulna, Treated With Closed Intramedullary Fixation:- Rare Case

KEYWORDS: Complex segmental fracture, forearm, radius, ulna, trauma

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ABSTRACT *Segmental forearm fractures are rare in children and results from significant force. Management of such injuries is controversial, epiphyseal injuries further complicates matters. Few cases of ipsilateral segmental fractures radius and ulna were reported but they associated with dislocations or ligamentous injuries. They are managed by extensive surgery like open reduction and internal fixation with plating.*

We describe the case of 11 year old boy with segmental fracture of ipsilateral radius and ulna with distal epiphyseal fractures of both bones and radial neck fracture. There are case reports of segmental forearm fractures in children, fractures of radial neck and multiple epiphyseal fractures. However to our knowledge, our patient's pattern of injuries were not previously reported in child or adult. We evaluated our management of such complex fracture pattern with closed reduction and k – wire fixation and assessed the outcome at 6 month follow-up. We achieved excellent result with less extensive surgery.

Introduction

Forearm fractures are common in children. The usual site of injury is distal radius. In children growth plate fractures accounts for 30% of all long bone injuries[1]. In adults segmental fractures of forearms are treated with open reduction and internal fixation (ORIF) [2]. In children these fractures are extremely rare and correct management is subject of debate[3].

The mechanism of injury in forearm injuries are variable, with falls from height and motor vehicle accidents being the leading cause. The force that is required for such injuries to occur is significantly greater than that for distal radius fracture[4].

Sign and symptoms are characteristic and make clinical diagnosis easy. Pain, deformity, swelling and loss of function of limb invariably exist. Physical examination should always include evaluation of neurovascular status and rule out complication like compartment syndrome. Radiological examination will demonstrate exact position and type of fracture.

ORIF with plates and screws, intramedullary elastic nails, intramedullary and percutaneous steinman pins have been used in children with no increase risk of compilations over using pins and plaster cast for unstable paediatric forearm fractures[5, 6]. In this case report pattern of injuries is not studied previously.

Case Report :

A 11 years old boy fell from tree approximately 25- 30 feet height and sustained injury to left forearm. Patient was unable to recall mechanism of injury. Initial x-rays showed ipsilateral fractures of radius and ulna with multiple epiphyseal injuries. Immobilization of limb done in long arm plaster slab. There was no any associated systemic or limb injuries. Neuro vascular status of involved limb were normal and no compartment syndrome.

Within 24 hours, patient was taken to operation theater for immediate attention to forearm fractures. Both fractures were treated with closed reduction and intramedullary fixation with k- wires. The patient's post-operative course was excellent and he was discharged on fourth day postop. Immobilization of limb done for 6 weeks, till radiological union. Patient was evaluated for bone union and functional outcome. Implant removal done after 6 months of injury. All fractures showed radiological union at 6 weeks. Clinically patient had excellent result and no visible deformity.

Discussion

We present this case where despite the severity of the bone injury, there was no associated dislocations or ligamentous injuries at adjacent joints. Management of such an array of complex segmental fractures is technically demanding. . There are only few case reports where such injuries are associated with dislocations or ligamentous at adjacent joints and treated with open reduction and internal fixation with plating. This is extensive surgery with associated complications like increase rate of infection, delayed union and rehabilitation. We opted for closed reduction and internal fixation with intramedullary k- wires[7].

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The patient seemed to have excellent radiological and functional outcome. He returned to all his day today activities. We conclude that closed reduction, though technically demanding, should be tried to achieve reduction. Intramedullary k-wire fixation is valid method of treatment for such complex segmental forearm fractures. The implants can be removed after radiological sound union.

Conclusion

We tried closed reduction and internal fixation with k-wires and achieved excellent functional outcome. Implant was removed after 6 months. We achieved excellent result with less extensive surgery.

REFERENCE

1. Mann DC, Rajmaira S. Distribution of physeal and nonphyseal fractures in 2,650 longbone fractures in children aged 0-16 years. J Pediatr Orthop. 1990;10 (6):713-716. | 2. Anderson LD, Sisk D, Tooms RE, Park WI III. Compression-plate fixation in acute diaphyseal fractures of the radius and ulna. J Bone Joint Surg Am. 1975;57(3):287. | 3. Cheng JC, Ng BK, Lam PK. A 10-year study of the changes in the pattern and treatment | of 6,493 fractures. J Pediatr Orthop. 1999;19(3):344-350. | 4. Demetrios Kapoutsis, Miltiades Ziogas, Ioannis Lachanas, Konstantinos Gartsioudis, Ioannis Zagas, Konstantinos Karliaftis. Complex Segmental Fractures of the Radius and Ulna without Associated Dislocation or Ligamentous Injury: A Case Report. Balkan Military Medical Review. 2013; 16(1): 44-49. | 5. Ortega R, Loder RT, Louis DS. Open reduction and internal fixation of forearm fractures in children. J Pediatr Orthop. 1996;16(5):651-654. | 6. Voto SJ, Weiner DS, Leighley B. Use of pins and plaster in the treatment of unstable | pediatric forearm fractures. J Pediatr Orthop. 1990;10(1):85-89. | 7. Calder PR, Achan P, Barry M. Diaphyseal forearm fractures in children treated with intramedullary fixation: Outcome of K-wire versus elastic stable intramedullary Nail. Injury. 2003; 34:278–82. |