

### English Papers 10 (L10-3)

## Metaphyseal–diaphyseal Junctional Fractures of the Distal Humerus in Children: Two Case Series

Gaku Niitsuma<sup>1</sup>, Toshio Yagi<sup>1</sup>, Kazutoshi Kubo<sup>2</sup>, Keikichi Kawasaki<sup>3</sup>, Katsunori Inagaki<sup>1</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Showa University School of Medicine, Japan,

<sup>2</sup>Department of Orthopaedic Surgery, Showa University Koto Toyosu Hospital, Japan,

<sup>3</sup>Department of Orthopaedic Surgery, Showa University Northern Yokohama Hospital, Japan

*Introduction:* Although there are few descriptions in textbooks and it is stated that the treatment of metaphyseal–diaphyseal junctional (MDJ) fracture is difficult, there is almost no detailed description on its treatment methods and precautions.

*Case Presentation:* We encountered two patients, 9-year-old and 1-year and 11-month-old Japanese boys, with MDJ fractures of the distal humerus, which are very rare in children. Unlike supracondylar fractures of the distal humerus, the fractures were spiral fractures, which made percutaneous pinning very difficult. Open reduction was performed using a bilateral approach with two skin incisions. Both patients recovered completely and had no problems carrying out activities of daily living or playing sports.

*Keywords:* Distal humeral fracture, metaphyseal–diaphyseal junction, children, open reduction.

*Conclusions:* For patients that are old enough to receive a locking plate, we recommend fixation using a locking plate. In cases of unilateral pinning without cross-pinning, retrograde intramedullary nailing should be considered. MDJ fractures of the distal humerus should be treated as distal humeral shaft fractures, not as subtypes of supracondylar fractures of the humerus.

### English Papers 10 (L10-4)

## One incision-two windows approach for fixation of multifragmentary coronoid process fracture of the ulna: A case report

Kentaro Futamura, Masahiro Nishida, Masayuki Hasegawa, Takafumi Suzuki, Ryo Sato, Yoshihiko Tsuchida

Orthopaedic Trauma Center, Shonan Kamakura General Hospital, Japan

Since the range of access of each surgical approach around the elbow has limitations, it is difficult to treat all types of fractures using only one approach. In the case reported herein, anterior and medial fragments of the comminuted ulnar coronoid process fracture were treated by preparing two access routes through one skin incision and effectively performing the buttress plating of each fragment.

The subject was a 27-year-old female who sustained a fracture of the coronoid process of the right ulna by falling during snowboarding. Computed tomography showed the concurrence of a type 2 subtype III and type 3 subtype I ulnar coronoid process fracture according to the O'Driscoll classification. The coronoid process was split into 3 parts: a fragment consisting of the anteromedial facet and upper half of the sublime tubercle (fragment 1), a central fragment including the tip (fragment 2), and a fragment extending from the radial side of the tip to the base of the coronoid process (fragment 3). A 12-cm-long skin incision was made on the anteromedial side of the elbow joint. The region of the anteromedial facet and sublime tubercle was reached by passage between the palmaris longus/flexor digitorum superficialis and humeral head of flexor carpi ulnaris using the over-the-top approach. Fragment 1 was fixed with a buttress plate. Using the anterior approach, the brachialis was then longitudinally split through by passage between the biceps and neurovascular bundle, fragments 2 and 3 were fixed together with a buttress plate.

The "one incision-two windows" approach, which provides two approaches (the over-the-top window and the anterior window) by a single skin incision, was implemented for a multifragmentary ulnar coronoid process fracture. This approach is considered to offer access from the front to each of the anterior and medial fragments and permits appropriate buttress plate fixation.