

Monteggia fracture-dislocation: a case report, its' initial management and review of bado's classification

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Abstract

Fracture of proximal ulna and dislocation of the proximal radio-ulna joint in the same arm is called Monteggia fracture- dislocation. Four clinical variants of this fracture- dislocation have been described in literature. This is a report and description of initial management of a fracture- dislocation, which was consequent to a sideswipe injury and consisted of a combination of the following injuries; lateral dislocation of the radial head, fractures of the olecranon and proximal ulna in the left forearm. The radial head dislocation and fracture of the olecranon were open. The head of the radius was exposed through the same wound. This fracture-dislocation resembled type 3 Bado's classification of Monteggia fracture-dislocation because of fracture of the olecranon close to the coronoid process and lateral dislocation of the head of radius.

Key words: Monteggia fracture- dislocation; initial management; Bado's classification.

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Introduction

Sideswipe injuries (SI)¹ are consequent to objects striking an elbow on the window ledge of a moving vehicle. The striking force can be another moving vehicle or objects protruding from it. A sideswipe injury usually consists of multiple. and a combination of fractures^{1,2}. They are often open fractures with wounds distal to the olecranon. Fracture of proximal ulna and dislocation of the proximal radio-ulna joint in the same arm is called Monteggia fracture- dislocation and can be caused by a sideswipe. This is a report and description of the initial management of a case of this type of fracture-dislocation, which consisted of a combination of the following injuries; open fractures of the olecranon, open lateral dislocation of the radial head, and fracture of the proximal one third of the left ulna.

Case report

MY, 35-year old, male, Nigerian, professional driver presented at the Accident and emergency Department of Usmanu Danfodiyo University Teaching Hospital Sokoto, Nigeria six hours after a road traffic accident, in which his left elbow was struck by a log of wood which projected from a vehicle that was coming from the opposite direction. On examination he was not pale but in distress due to pain. The left upper limb was flexed at

the elbow and immobilized in a sling. Removal of the blood stained bandage around the elbow exposed the olecranon, head of the radius and the trochlea. Plain radiography of the left elbow revealed the radial head dislocation, fracture of the olecranon and proximal left ulna^{1,2} (figures 1A and 1B). Wound swab was taken for microscopy, culture and sensitivity. Packed cell volume was 38%. Random blood sugar level was 6mmol/L.

Figure 1A: Plain radiography at presentation



Initial management of the injury

He had surgery the same day. Access to the fractures during surgery was gained through the existent wound. The radial head dislocation was reduced by traction. There was loss of bone from the olecranon. Intramedullary nailing aligned all the fragments of the ulna. Stainless steel wire was used to maintain the reduction of the olecranon. The wire fixation and initial intramedullary nailing were not rigid enough. For this reason the whole arm was immobilized in a plaster-of-Paris cast (figure 2).

Figure 1 : B Sketch of Figure 1A

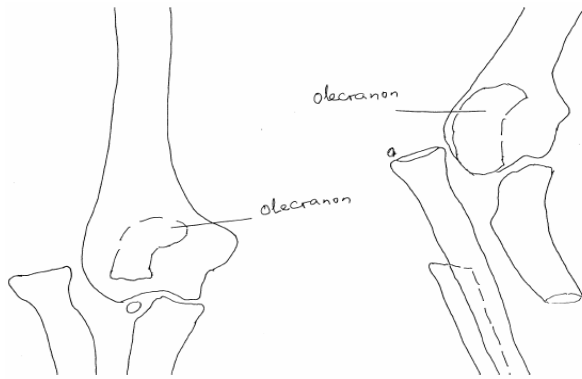


Figure 2: Plain radiography two days after surgery

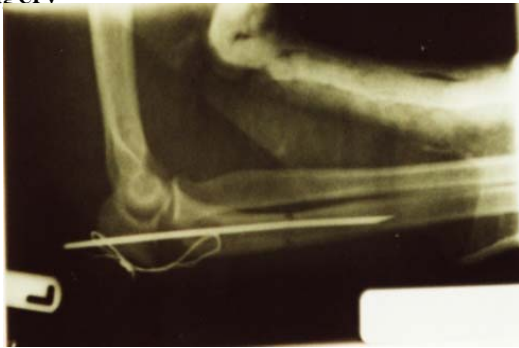


Figure 3: Plain radiography three months after surgery

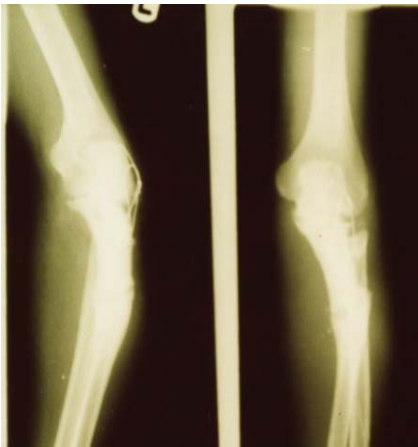


Figure 4: Type 1 bado's classification of monteggia fracture-dislocation

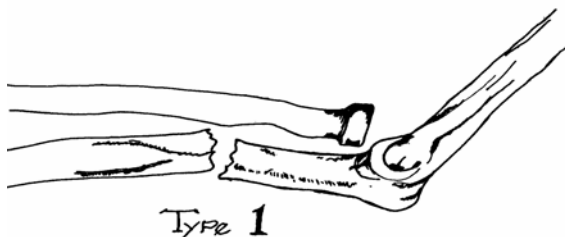


Figure 5: Type 2 bado's classification of monteggia fracture-dislocation

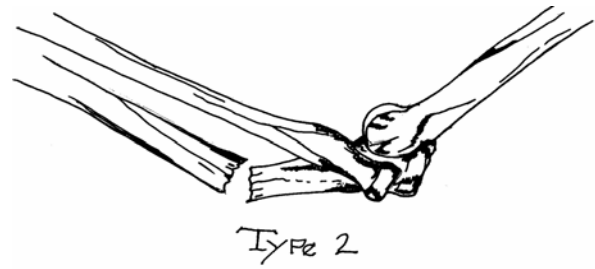


Figure 6: Type 3 bado's classification of monteggia fracture-dislocation

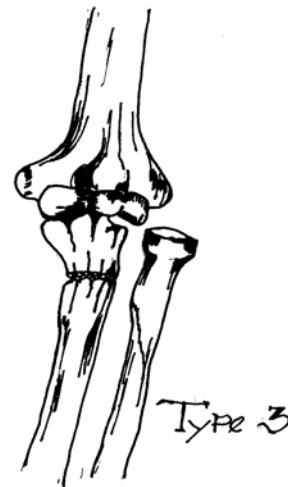
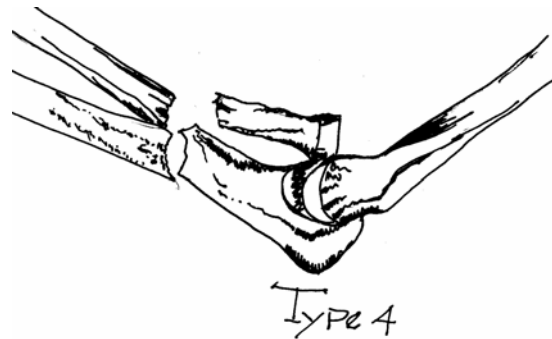


Figure 7: Type 4 bado's classification of monteggia fracture-dislocation



Result

After two days, the wound culture revealed staphylococcus. The ciprofloxacin was prescribed for him on the basis of the sensitivity pattern³. The same day check plain radiography was done and it showed alignment of the fragments. At this time also a window was opened at the elbow for wound dressing, on alternate days with hydrogen peroxide and pure, natural, bee honey⁴ and the intramedullary nail was removed under anaesthesia. Six weeks after surgery the wound had contracted significantly and another check plain radiography revealed callus formation at the fracture sites. After three months the wound and fracture had healed completely (figure 3). The cast and wire were removed. There was 170° and 80° of active extension and flexion respectively⁵. The patient was planned for repeat surgery but he declined and said he was satisfied with the outcome of the initial management. He could drive and was discharged.

Discussion

In the literature reviewed in the internet and through colleagues, fracture-dislocation of such type was not mentioned. Management of the fractures was difficult because of the wound¹. There was the risk of infection. Extensive dissection for internal fixation would have denuded the bones, caused necrosis and spread infections. Repeat surgery after the healing of the wound may have improved movement at the elbow but the patient was not interested. Bee honey⁴ dressing promoted wound healing.

Conclusion

Bado⁶ classified Monteggia fracture-dislocation into four types (figures 4, 5, 6 and 7): Type 1 consisted of fracture any where in the proximal two third of the ulna, anterior dislocation of the radial head and apex anterior angulation of the ulna. Type 2 consisted of fracture any where in the proximal two third of the ulna with the apex usually angulated posteriorly, posterior dislocation and often with fracture of the radial head. Type 3 consisted of ulna fracture, just distal to coronoid process and lateral dislocation of the radial head. Type 4 consisted of fracture any where in the proximal two third of the ulna, anterior dislocation of the radial head and fracture of the proximal one third of the radial below the bicipital tuberosity. This fracture-dislocation due to a sideswipe injury is rare and resembled type 3 Bado's classification of Monteggia fracture-dislocation because of fracture of the olecranon

close to the coronoid process and lateral dislocation of the head of radius.

References

1. Crenshaw Jr AH. Sideswipe fractures. In: Canale ST, ed. *Campbell's operative orthopaedics*. London: Mosby Inc., 1992:2317-19.
2. McRae R. *Practical fracture treatment*. London: Churchill Livingstone, 1981.
3. Nelson CL. Antibiotics in bone, joint, hematoma. In: *Instructional Course lectures AAOS*. St. Louis. The C. V Mosby Company, 1977; xxvi: 34.
4. Effem SE. Clinical observation on the wound healing property of honey. *BJ SURG* 1988; 75:679-81.
5. Levy RN et al. Complications of treatment of fractures and dislocations of the elbow. In: Epps Jr C H, ed. *Complications in orthopaedic surgery*. London: JB Lippincott Company, 1978:319-20.
6. Bado JL. The Monteggia lesion. *Clin. Orthop.* 1967; 50:71.