Hematoma Evacuation to Improve Closed Reduction of Bennett Fracture

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Received: 25 February 2015 / Accepted: 13 May 2015 / Published online: 21 May 2015
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Dear Sir,

The Bennett fracture is an intra-articular fracture of the base of the thumb and is the most common first metacarpal fracture [1, 2]. The mechanism of injury is axially-directed force through the partially flexed first metacarpal which causes an intra-articular fracture with a single volar ulnar fragment. Closed reduction and casting, closed reduction and percutaneous pinning, and open reduction and internal fixation are described as the possible treatment options. The goal of the reduction is to achieve less than a 1 mm gap at the articular surface of the first metacarpal [1, 3].

The technique of the closed reduction is described as first metacarpal extension and pronation while applying longitudinal traction and manual pressure to the base of the metacarpal in order to reduce the fracture. If adequate reduction cannot be achieved with a closed reduction, open reduction and fixation can be considered [3]. Before resorting to open reduction, however, hematoma evacuation may help with a closed reduction by decreasing the intra-articular pressure and allowing for better reduction in acute cases.

A 61-year-old male sustained a right Bennett fracture after a fall. Closed/open reduction and percutaneous pinning/internal fixation for the right Bennett fracture was indicated. Despite several attempts of a closed reduction, congruent joint

surface could not be achieved. Before moving to an open reduction, an 18-gauge needle was inserted into the first carpal metacarpal joint (Fig. 1). Less than 1 cc hematoma was evacuated. The needle was removed and closed reduction was performed according to previously described technique [3]. After hematoma evacuation, anatomic closed reduction was successfully achieved (Fig. 2). Two 1.2 mm K-wires were used for fracture fixation. The bone healed and patient recovered without complications.

Hematoma evacuation and bone reduction has previously been described [4], however, according to our best knowledge, it has not been described for the closed reduction of Bennett fracture. We believe that intra-articular hematoma could be a possible barrier to a successful closed reduction. Because of joint distraction caused by the intra-articular hematoma, an 18-gauge needle is relatively easy to insert in the joint and has shown to be successful in evacuating the hematoma.

Fig. 1 Intraoperative fluoroscopy image of right first metacarpal. Please note that the 18-gauge needle was inserted to drain hematoma

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Fig. 2 Post-reduction fluoroscopy image of right first metacarpal fracture. Successful closed reduction was achieved

Acknowledgments

Conflicts of interest Authors declare that they have no conflicts of interest.

Funding This study was not supported by any grant or funding.

Ethical statement This article presents a surgical approach utilized on a human subject from whom consent was obtained. No studies or research was performed for the writing of this article.

The manuscript has not been submitted to more than one journal for simultaneous consideration.

The manuscript has not been published partially or fully previously.

No data have been fabricated or manipulated (including images) to support conclusions

This work has not been presented or published in any meetings or any journal. The images in this publication were taken by senior author and it is our own work.

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