

## The Kaplan's Lesion : A Childs Nightmare, A Surgeons Adventure

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### INTRODUCTION:

In 1957, Kaplan described an irreducible index finger dorsal metacarpal head dislocation, and the relevant anatomy that prevents the reduction of the joint. It is a relatively a rare occurrence and surgical reduction still remains as the gold standard. The concept of 'buttonholing' of the metacarpal head through volar structures is still relatively unpopular and thus might prevent the surgeon from making an informed decision in regards to the surgical approach and technique.

### REPORT:

An 11 year old boy sustained a right index finger dorsal metacarpal head dislocation when a fellow student fell on his hand. The index was fully extended and the palm faced upwards when the fall happened in school.

He was brought to a clinic, where closed manual reduction was attempted and failed, he was bought to the emergency department and CMR was attempted again, which also failed.

Child was subsequently arranged for open reduction under general anesthesia.

Choice was approach is volar, due to the anticipation of the metacarpal head getting stuck in between the volar structures.

Intra-operatively, it was noted that the metacarpal head is buttonholed and trapped in between the natatory ligament distally, the superficial transverse ligament proximally, flexor tendon radially, and the lumbricals ulnarly. In addition , the volar plate was also displaced in between the joint space.

Both the digital arteries and nerves were identified and protected during the surgery Gentle axial traction was applied, with careful disengagement of the structures stuck around the metacarpal head, and also 'fishing out' of the volar plate, we are successful in reducing the metacarpal head.

Approximation sutures were applied at the proximal end of the volar plate. And

intraoperatively range of motion of the joint is full with no dislocation or subluxation.

Patient was put on a dorsal malleable splint for a few days, and 2 weeks later, assessment shows full, painless ROM of the index MCP joint.



**Figure 1: Clinical pictures and xray**



**Figure 2: approach and operative finding**

### CONCLUSION:

In complex metacarpal dislocation, choice of approach is important due to the structures involved that prevents the metacarpal head from reduction. The easier, more common dorsal approach allows for splitting of the displaced volar plate and allows it to be pushed volarly. However if the metacarpal head is also stuck at the volar structures, another volar incision would have to be made, thus complicating the surgery. We highly recommend single volar approach as it more versatile.

### REFERENCES:

1. Kaplan EB. Dorsal dislocation of the metacarpophalangeal joint of the index finger. *J Bone Joint Surg Am* 1957;39:1081-6
2. Um, Junghwan et al. "Kaplan's Lesion of the Little Finger Treated with Open Reduction by a Volar Approach: A Case Report." (2021).