

A closed dorsolateral dislocation of PIP joint of the fourth toe-a case report and review of literature

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ABSTRACT: Interphalangeal (IP) joint dislocations of the toes are uncommon lesions. We present here a case of closed dorsolateral dislocation of proximal interphalangeal (PIP) joint of the fourth toe. Closed reduction and buddy strapping have been done with middle toe for two weeks under digital block. There was painless full range of movement after 2 weeks. We propose that attempt of closed reduction must be given adequately under anesthesia before proceeding for open reduction.

KEY WORDS: Dislocation; Interphalangeal joint; Toes

INTRODUCTION

Dislocation of the interphalangeal joint of a toe is a rare injury, and when it occurs, it usually involves the great toe¹. Dislocation of other toes without fracture is much rarer. There is only one case of dorsal dislocation of PIP joint of fourth toe reported in the literature¹. We present here a case of dorsolateral dislocation of the proximal interphalangeal (PIP) joint of fourth toe which was reduced by manipulation.

CASE REPORT

A 11year old boy presented to out patient clinic of B. P. Koirala Institute of Health Sciences with the complaints of pain and deformity of the fourth toe of left foot following abduction injury while playing football the day before. Clinicoradiologically, it was diagnosed as closed dorsolateral dislocation of PIP of the fourth toe (**Figure 1**). Under digital block, closed reduction and buddy strapping have been done with third toe (**Figure 2**). After buddy strapping the patient was asked to walk with slipper with heels and limit his activity for a couple of weeks. The patient was then followed up for 2 weeks. After 2 weeks, strapping was removed and mobilization of toes started. The patient was walking without limp after 2 weeks and no recurrence was seen after a follow up period of 6

months. Full range of movements of the fourth toe was achieved without any pain.



Figure 1: Pre-reduction



Figure 2: Post-reduction

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DISCUSSION

There are only 18 cases reported in the literature regarding dislocation of lesser toes. Only one of them describes PIP of 4th toe, but it does not describe the exact mechanism of injury¹. **Katayama et al**² have reported three cases of complex dislocation of DIP of second toe. Closed reduction was prevented by interposition planter plate and open reduction was successful through a dorsal approach. **Fugate et al**³ reported an irreducible fracture dislocation of the PIP joint of third toe due to interposition of flexor tendon. **Jahss**⁴ reported an interesting series of ten patients with persistent, unreduced dislocation or recurrent dislocation of PIP joint of fifth toe after untreated abduction injury to that digit. The patient complained of deformity and toe irritation from shoes but no joint pain. The surgical treatment found most effective for these chronic problems was resection arthroplasty of the joint combined with syndactylization of the toe to the adjacent fourth toe. **Akahane et al**⁵ described a case of irreducible DIP joint of second toe for which open reduction was performed because closed reduction was unsuccessful as a result of interposition of collateral ligament into the joint space. **Nakae et al**¹ reported dorsal dislocation of PIP joint of 4th toe which was reduced by manipulation. In present case, the patient had

dorsal dislocation of PIP joint of 4th toe and it was reduced by closed manipulation.

CONCLUSION

Interphalangeal (IP) joint dislocations of the toes are relatively rare and dislocation of the 4th toe is much rarer. Attempt of closed reduction must be done under anesthesia before proceeding for open reduction.

REFERENCES

1. Nakae H, Endo S, Hoshi S. A case of dorsal dislocation of the proximal interphalangeal joint of the fourth toe. *Arch Orthop Trauma Surg.* 1996;115(1):59-60.
2. Katayama M, Murakami Y, Takahashi H. Irreducible dorsal dislocation of the toe. Report of three cases. *J Bone Joint Surg Am.* 1988 Jun;70(5):769-70.
3. Fugate DS, Thomson JD, Christensen KP. An irreducible fracture dislocation of lesser toe: a case report. *Foot Ankle.* 1991 Apr;11(5):317-8.
4. Jahss MH. Chronic and Recurrent dislocation of the fifth toe. *Foot Ankle.* 1981 Mar;1(5):275-8.
5. Aahane M, Sada M, Tanaka Y. Irreducible DIP joint dislocation of the second toe. *The Foot.* 2001 Jun;11(2):103-5.