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

Dr. Navin Kumar Karn MS, Dr. Pravin Nepal MS, Dr. Navin Subedi, Dr. Sumantu Virmani, Prof. Mahi Pal Singh MS and Prof. Giris Kumar Singh MS

Department of orthopedics, B.P. Koirala Institute of Health Sciences, Dharan, Nepal

(Received 24 May 2008 and accepted 22 June 2008)

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 toe. 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 literature. 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 11-year-old boy presented to our 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. Clinically, 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

(Corresponding Author: Dr. Navin Kumar Karn, Assistant Professor, Department of orthopedics, B.P. Koirala Institute of Health Sciences, Dharan, Nepal, Email: navinkarn@yahoo.com)
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 injury. Katayama et al. 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. reported an irreducible fracture dislocation of the PIP joint of third toe due to interposition of flexor tendon. Jahss 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. 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. 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