Traumatic Elbow Subluxation in a Child : Case Report

CHAIWAT KRAIWATTANAPONG, MD.*,
THEERASAN KIRIRATNIKOM, MD.*

Abstract

An 11-year-old boy fell on his outstretched right arm, following which he had pain on the lateral aspect of his right elbow with limitation of range of motion. Roentgenograms showed right elbow subluxation. The elbow was reduced and immobilized in a long arm splint for 5 days. The result was excellent. Elbow subluxation in previous reports was the result of recurrent elbow dislocation with instability. There are no reports of elbow subluxation in patients who did not have underlying recurrent elbow dislocation or elbow instability. This condition is easy to diagnose and has an excellent outcome.

Key word : Elbow Subluxation, Child, Case Report

KRAIWATTANAPONG C & KIRIRATNIKOM T
J Med Assoc Thai 2001; 84: 1646-1649

Elbow subluxation in children is rare. In previous reports, all of them occurred after recurrent elbow dislocation, due to laxity of ligaments. We report the case of a healthy child who had elbow subluxation after falling on his outstretched arm.

CASE REPORT

An 11-year-old boy fell on his outstretched right arm with the elbow in slight flexion. He had pain at the lateral aspect of the elbow and could not flex or extend his elbow fully. Physical examination revealed mild soft tissue swelling and localized tenderness at the posterolateral aspect of the right elbow. His elbow had limited motion of 45° to 70° in flexion-extension and he could not pronate or supinate his forearm. Other physical examinations were unremarkable and there was no hyperlaxity of any joints. Roentgenograms showed slight valgus on

* Department of Orthopaedic Surgery, Faculty of Medicine, Prince of Songkla University, Songkhla 90110, Thailand.

Fig. 1A, 1B. Initial right elbow radiograph (A) anteroposterior radiograph demonstrated slight valgus of the elbow (B) lateral radiograph demonstrated elbow subluxation with minimal rotation (condyles were not parallel).

Fig. 2. After closed reduction, lateral radiograph demonstrated congruence of the elbow joint but slight widening of the joint space.

Fig. 3. Six-week follow-up radiograph, lateral radiograph demonstrated congruence of the elbow joint and no widening of the joint space.

the anteroposterior view (Fig. 1A) and elbow subluxation with minimal rotation on the lateral view. (Fig. 1B) The injury was treated conservatively; 15-mg pethidine and 3-mg diazepam were given intravenously for anesthesia and sedation. The elbow was reduced by simple axial distraction along the axis of ulna and applied direct pressure was applied over the olecranon until a clicking sensation was felt.

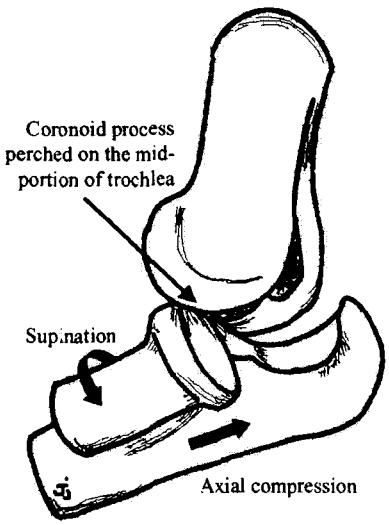

Fig.4

Fig. 4. Diagrammatic representation of elbow subluxation, axial compression and valgus force applied to the forearm in the supination position, olecranon and radial head subluxated posteriorly and the coronoid process perched on the middle of the trochlea.

Congruence of the elbow was checked by fluoroscopy. After reduction, physical examination showed full passive range of motion of the elbow in all directions with good stability. The elbow was immobilized in a long arm posterior splint in 90° flexion and the forearm in neutral position.

After closed reduction, radiography showed congruence of the elbow joint but a slight widening of the joint space in the lateral view (Fig. 2). The splint was removed after 5 days and active range of motion exercise of the elbow was encouraged. Six weeks later, radiographs showed no widening of the joint space (Fig. 3). There was full range of motion of the right elbow without pain or instability.

DISCUSSION

Hassmann, Symeonides, and Trias reported elbow instability and subluxation occurring because of laxity of ligaments from recurrent dislocation [1-3]. There have been no reports of elbow subluxation from trauma in patients without an underlying condition. The mechanism of injury in this patient could be explained as follows: when the elbow was loaded by axial compression, valgus force and supination of forearm, the olecranon and radial head subluxated posteriorly. The coronoid process pressed on the midportion of the trochlea and prevented the trochlea from moving backward (Fig. 4)[4]. If the force is sustained and increases the elbow will progress from subluxation to dislocation. The reduction was done by dislodging the trochlea from the coronoid process. After reduction the elbow remained in good stability because most of the ligaments were intact. The elbow was immobilized for a few days to reduce pain. In our opinion, some cases of elbow sprain may be the result of spontaneous reduction of elbow subluxation.

We surmise the widening of the joint space may be from hematoma because the patient had congruence of the joint and full range of motion. No further investigation was performed and the child had returned to normal joint space in a follow-up film 6 weeks later.

SUMMARY

Elbow subluxation can occur without a history of elbow instability and should not be ignored because it is simple to reduce and excellent functional results can be achieved.

ACKNOWLEDGEMENT

The authors wish to thank Jarungjit Yongyukantorn, MD, for the illustration.

(Received for publication on April 21, 2001)

REFERENCES

1. Hassmann MGC, Brunn F, Neer II CS. Recurrent dislocation of the elbow. J Bone Joint Surg Am 1975; 57: 1080-4.
2. Symeonides PP, Paschaloglou C, Stavrou Z, Pangaldes TH. Recurrent dislocation of the elbow. Report of three cases. J Bone Joint Surg Am 1975; 57: 1084-6.
3. Trias A, Comeau Y. Recurrent dislocation of the elbow in children. Clin Orthop 1974; 100: 74-7.
4. O' Driscoll SW, Morrey BF, Korined S, An K-N. Elbow subluxation and dislocation. A spection of instability. Clin Orthop 1992; 280: 186-97.

กระดูกข้อศอกเคลื่อนจากอุบัติเหตุในเด็ก : รายงานผู้ป่วย

ชัยวัฒน์ ไกรวัฒนพงศ์, พ.บ., ธีรสาส์น คีรีรัฐนิคม, พ.บ.**

รายงานผู้ป่วยเด็กชายไทย 1 ราย อายุ 11 ปี มีประวัติอุบัติเหตุหกล้มเอามือขวายันพื้นมีอาการปวดข้อศอกขวา โดยเฉพาะด้านนอกของข้อ ตรวจร่างกายพบมีบวมเล็กน้อยที่ข้อศอกขวา และขยับข้อศอกได้ไม่สุด ภาพถ่ายทางรังสีพบมีกระดูกศอกขวาเคลื่อน แต่ไม่มีการหลุดออกจากกัน ผู้ป่วยได้รับการดึงให้เข้าที่ และใส่เฝือกไว้ 5 วัน ผลการรักษาผู้ป่วยหายเป็นปกติดีและขยับข้อศอกได้เต็มที่ ผู้ป่วยข้อศอกเคลื่อนที่พบในรายงานจะเป็นผลจากข้อศอกหลวมซึ่งเป็นจากการหลุดซ้ำ ๆ ของข้อศอก ยังไม่เคยมีรายงานผู้ป่วยเด็กข้อศอกเคลื่อน โดยที่เด็กไม่เคยมีประวัติข้อศอกหลุดมาก่อน ภาวะนี้รักษาง่ายและได้ผลดี จึงนำเสนอเพื่อเป็นประโยชน์ในการดูแลผู้ป่วย

คำสำคัญ : กระดูกข้อศอกเคลื่อน, ผู้ป่วยเด็ก, รายงานผู้ป่วย

ชัยวัฒน์ ไกรวัฒนพงศ์, ธีรสาส์น คีรีรัฐนิคม
จดหมายเหตุทางแพทย์ ฯ 2544; 84: 1646–1649

* ภาควิชาศัลยศาสตร์ออร์โธปิดิกส์, คณะแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์, สงขลา 90110