

Bilateral Simultaneous Radial Neck Fracture In A Child Due To Fall On Outstretched Hands

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Citation

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Abstract

Fractures of the proximal radius are among the most common fractures and account for 9% to 25% of the elbow fractures in children. However, bilateral radial neck fractures are extremely rare injuries in children and have been reported very few times before in present English literature.

INTRODUCTION

Fractures of the proximal radius are among the most common fractures and account for 9% to 25% of the elbow fractures in children. However, bilateral radial neck fractures are extremely rare injuries in children and have been reported very few times before in present English literature¹. We report a case of bilateral radial neck fractures in a 13-year-old boy resulting from a fall on outstretched hands. Careful physical examination and proper radiographs are necessary for the diagnosis.

HISTORY

A 13 year old boy presented in our trauma centre with chief complains of pain and swelling in both elbows following trauma due to fall. The patient had a history of fall on outstretched hands with both elbows slightly flexed while he was trying to jump over a wall about 2 feet high.

ON EXAMINATION

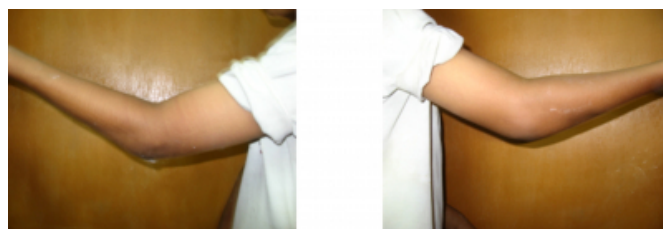
He had swelling over both elbows with more on right side as compared to left side. Tenderness was present on radial head on both sides. The patient was unable to do pronation and supination and did not allow it even passively. Passive elbow flexion and extension was allowed. Three bony point relationships were maintained.

Figure 1



BOTH ELBOWS

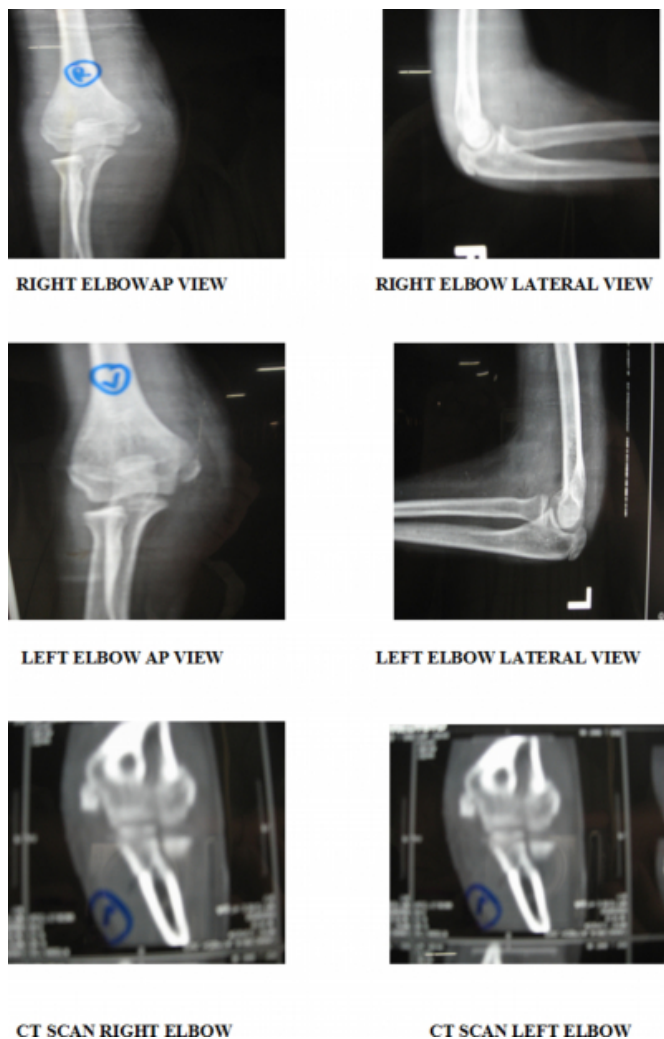
Figure 2



LEFT ELBOW

RIGHT ELBOW

Figure 3



INVESTIGATIONS

The patient was investigated in form of x-rays of both elbows anteroposterior and lateral view. Radiocapitellar view was not done. Later on to confirm the findings CT scan of both elbows was done.

MANAGEMENT

The patient was given bilateral above elbow posterior plaster splint in 90 degree flexion and full supination and strict elevation was given. Once the swelling reduced after 2 days of splinting and analgesics, the patient was given above elbow cast in same position.

DISCUSSION

Fractures of the radial head are the most commonly seen elbow fractures in adults, accounting for 1.5% to 4 % of all fractures and approximately 33% of all elbow fractures^{2,7}. The mechanism of injury in radial head and neck fractures is usually a fall onto an outstretched hand with a partly

flexed elbow and pronated forearm causing longitudinal impact of the radius against the capitellum³. Fekete, Detre and Szepesi described the physiological valgus position of the elbow joint as the reason for this joint's vulnerability⁴. The force is transmitted along the line of the forearm producing a valgus stress at the elbow. Compression of the radial head against the capitellum commonly results in fractures due to shearing between the vertically aligned trabeculae and may also produce macroscopic damage to the capitellum

Patients classically present with painful passive rotation of the forearm. Crepitus, pain and swelling of the lateral aspect of elbow are also typically present.³ Diagnostic features such as the presence of a fracture line and a positive fat pad sign may not be obvious in all cases⁵. Mason's classification (based on the severity of radial head and neck fracture) is used clinically to formulate the type and extent of treatment⁶. In our case, the patient presented with pain on the lateral aspect of the elbow and painful forearm rotation.

Conventional radiography with AP & Lateral views is adequate for detection of radial head and neck fractures. Internal and external oblique radiographs are required occasionally. A special view the radiocapitellar view has been shown to increase the sensitivity by only 1%⁸ and hence is not routinely used. CT with reconstruction images is of helpful in doubtful cases and aid in decision making. In our case diagnosis was suspected clinically and was not obvious on X-rays on left side. Hence CT scan was done which revealed the fracture.

We present this case as a timely reminder for clinicians, who when dealing with trivial injuries should examine patients with a high index of suspicion for bilateral injuries. To date, there are 2 published reports on this unique presentation^{3,6}. No matter how 'trivial' the mechanism of injury maybe, the presence of one easily diagnosed injury should not rule out a thorough examination of the patient for other injuries

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