

Bilateral rotatory subluxation of the scaphoid

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SUMMARY

We describe the case of a 17-year-old girl, who presented to our Accident and Emergency (A&E) department following minor trauma to her forearm. Initial x-rays were misread as normal. Radiographs demonstrated classical features of rotatory subluxation of the scaphoid, which was found to be bilateral.

Key words: radiography, scaphoid, subluxation, trauma

INTRODUCTION

Rotatory subluxation of the scaphoid is a relatively rare occurrence.¹ It may occur with various forms of wrist trauma, but has been seen in the absence of significant trauma. It was first described in the literature in 1949.²

Rotatory subluxation of the scaphoid has been reported in cases related to significant trauma and, in one case, in a patient with generalized ligamentous laxity.³ The patient described here had no evidence of ligamentous laxity, and was asymptomatic in relation to the bilateral scaphoid subluxation.

CASE REPORT

A 17-year-old girl presented to the A&E department 1 day after a fall at football. She complained of having had pain in the left forearm and wrist since the time of injury.

She was seen by the senior house officer (SHO), who noted tenderness over the radial styloid and distal radius. She had a full range of movement at her wrist. No neurovascular deficit or deformity was present. Radiographs of her left wrist were obtained and thought to be normal by the SHO. She was treated with an elastic support bandage and sling, and was discharged.

The radiographs were later reported as showing a rotatory subluxation of the left scaphoid (Fig. 1). The patient was recalled for further evaluation.

On review, the clinical findings were consistent with a severe soft tissue injury over the distal radius. There was no tenderness or abnormality present on examination of the carpal bones. An isotope bone-scan was normal. Radiographs of the right wrist were obtained, which showed a rotatory subluxation of the right scaphoid also.

At follow up, the patient's symptoms continued to improve and followed the pattern of a soft tissue injury to her distal forearm.

This patient's right wrist was asymptomatic, as was her left wrist following standard management of the soft tissue injury. We feel the radiographic findings to be incidental to the described trauma and of undetermined duration. The patient's general practitioner has been informed of the findings and long-term follow up has been arranged.

DISCUSSION

Rotatory subluxation of the scaphoid may be associated with many different aetiological factors. The most commonly associated factor is trauma. It has been associated with various carpal bone



Fig. 1. Postero-anterior radiograph of the left wrist demonstrating ring sign, shortened scaphoid and widened scapholunate space.

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dislocations;⁴ infection and rheumatoid arthritis;⁵ Keinboch's disease;⁶ and post-excision of ganglion.⁷

Bilateral rotatory subluxation of the scaphoid has been reported following trauma,⁸ and in a patient with documented generalized ligamentous laxity.³

Cadaver studies have helped to define the exact mechanism of this injury. In order for rotatory subluxation to occur, there must be disruption of the scapholunate interosseous ligament, coupled with disruption of either the palmar intracapsular radio-carpal ligaments, or the scaphotrapezium ligament complex.⁹

Therefore, in acute cases, it is a sign of significant disruption of the carpal ligament complex and, if missed, can lead to limitation of wrist movement progressing to radio-carpal arthritis.¹⁰ The results of surgical treatment of acute cases are good. However, in established cases of rotatory subluxation, delayed surgery has not always been as successful.¹¹

The radiographic features are well described¹² and include: loss of height of the scaphoid, widening of scapholunate space, and a ring appearance over the distal scaphoid pole, all on a postero-anterior (PA) view. Increased scapholunate angle is noted on the lateral film. (Fig. 2). Rotatory subluxation of the scaphoid is not easily diagnosed and may be



Fig. 2. Lateral radiograph demonstrating increased scapholunate angle to 90 degrees.

missed by the inexperienced SHO. In the patient described here, all four of the classical signs are demonstrated on the PA and true lateral views (Figs 1 & 2).

Rotatory subluxation of the scaphoid is a serious condition with potentially significant sequelae if overlooked. In this case it was felt that, because they were bilateral and symmetrical without localized symptoms or clinical findings the subluxations were not directly related to the presenting trauma. The possibility of 'incidental' rotatory subluxation may be considered if bilateral, or if the trauma and clinical findings are not supportive of acute ligamentous disruption. Otherwise an urgent orthopaedic referral is advised.

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