

Unilateral fusion of the Scaphoid and the trapezium: *a case-report.*

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ABSTRACT

Fusion of the carpal bones is a rare anatomical abnormality, caused by a defect in the separation and cavitation during embryonic development. It has a prevalence of about 0,1% and most of the time patient do not present with symptoms. Symptoms are usually caused by wear and tear of the ligaments attached to the fused carpal fragments. We present a case in which a 36-year-old women experiences pain caused by a lunato-triquetral instability in turn caused by a unilateral complete fusion of the scaphoid and the trapezium. A unilateral

INTRODUCTION

The carpal bones are formed during embryogenesis by separation and cavitation of the cartilaginous precursors of the carpals. When there is an incomplete separation or cavitation, a carpal coalition is formed.¹ This is a rare congenital defect with a prevalence of about 0,1%^{2,3}. The first clinical case of carpal coalition was described by Corson in 1908⁴ and since then many forms of carpal fusion were described^{5,6}. Fusion of the scaphoid and trapezium, however is scarcely reported^{7,8,9}. In this case-report we present a case with a unilateral complete fusion of the scaphoid and the trapezium with symptoms of lunato-triquetral (LT) instability. Also, a possible treatment for this phenomenon is presented and verified using the q-dash and PRWE scoring form.

Case report

A 36-year-old, right handed woman presented at our outpatient clinic with bilateral wrist pain, which was worse on the left side. The pain was exacerbated by using her hands. At the time she also had a sense of wrist instability. At this time the grip strength was diminished. There were no complaints of pain at night and there was no history of trauma. In the past the patient had a passing episode of wrist pain.

During physical examination the patient did not complain of pain. We did not see any external abnormalities. Both wrists had and fluid and full range of motion. The Watson test was positive and the shear test at the LT interval was also positive. Further specific wrist test were negative and tests for neurological disorders were all negative.

An extensive wrist radiograph series was taken of both wrists including: antero-posterior, lateral, ulnar and radial deviation and clenched fist with ulnar and radial deviation. The radiographs showed a unilateral scapho-trapezial (ST) fusion on the right side (Fig 1).

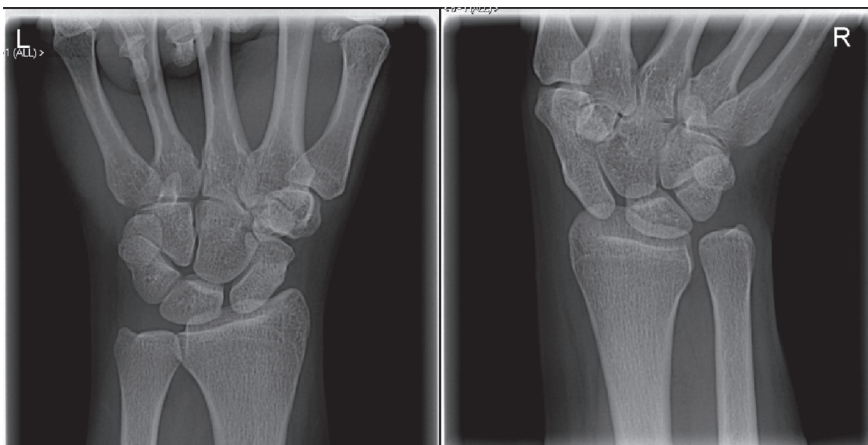


Figure 1 Scapholunatal fusion in the right hand and normal anatomical configuration on contralateral side.

No evident sign of scapho-lunate (SL) dissociation, not DISI deformity was present. There was a normal anatomical configuration of the left side (Fig 1). A CT-scan also showed a coalition between the scaphoid and the trapezium as seen on the radiographs. The scan did not show a SL dissociation. (Fig 2)

The pain in both wrists might be caused by a LT instability which, on the right side, could be caused by the congenital fusion of the scaphoid and trapezium. We decided on a conservative approach with a removable wrist brace and stabilizing hand-physiotherapy. After 3 months of treatment the patient was asked to fill out the q-dash and the PRWE score. All questionnaires showed a significant improvement in pain and mobility.

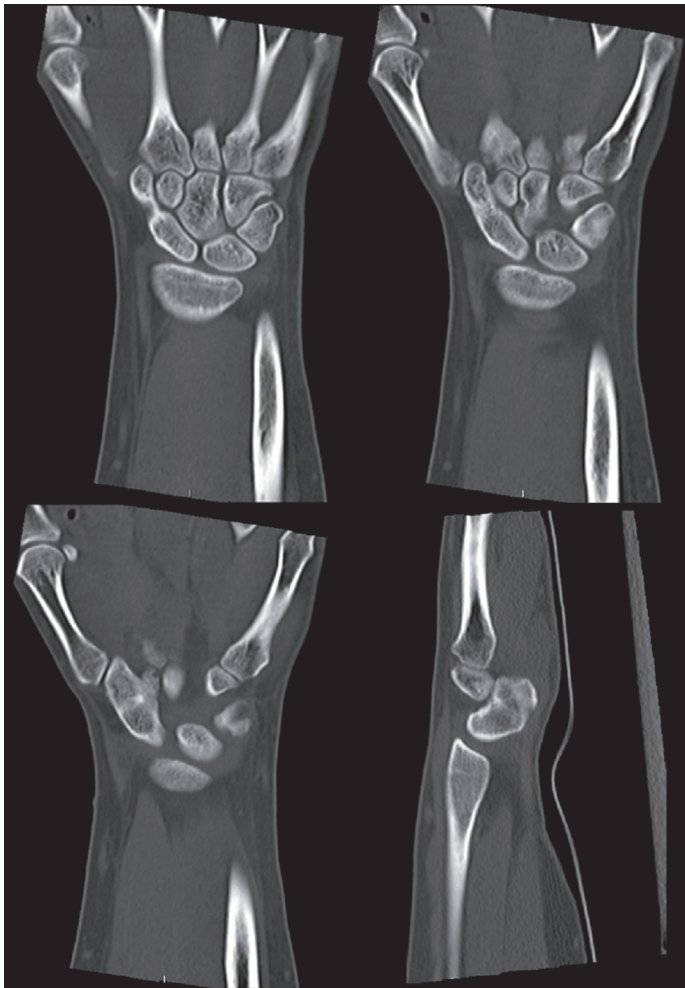


Figure 2. Ct-scans of scapholunate fusion.

DISCUSSION

Carpal coalition of the scaphoid and trapezium is a rare congenital defect. Only 3 case-reports could be identified. Interestingly this is the first time a unilateral fusion is described. Our patient presented with wrist pain at the LT interval. A carpal coalition is normally asymptomatic¹⁰⁻¹² but in this case the ISTF was symptomatic. The change in the carpal kinetics could have caused a higher stress load on the LT joint and ligament in turn causing the pain. Weinzig⁷ describes two cases of fusion between the scaphoid and the trapezium, however in the first case he describes a partial fusion and the second case, not only a fusion of the scaphoid and trapezium was found, but also a fusion of the scaphoid and trapezoidium. In contrast to the pre-mentioned studies our case the fusion is complete and isolated between the scaphoid and the trapezium. Also, no signs of external abnormalities were seen unlike apard⁸. Wilson⁹ describes a bilateral partial and complete fusion of the scaphoid and the trapezium. This is the first mention of a complete, unilateral fusion of the scaphoid and the trapezium.

The patient presented with symptoms. The complaints were localized at the LT interval and not at the site of the ST fusion or nearby. She did not have complaints of the SL joint instability as one would expect with a ST fusion. This case demonstrates that with the complex kinetics of the carpal bones.

The effect of conservative treatment was measured using a Qdash and PRWE scoring system. The scores improved in two months from 64,47 to 39,47 for the Qdash and 40 to 22 for the PRWE. The conservative treatment therefore seems to be a good option. If symptoms should progress a reinforcing capsula interposition could be considered.

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