

# **Influence of the Lunate Type on Involvement of Scapho-Trapezium-Trapezoid Arthritis in Patients with Trapeziometacarpal Osteoarthritis**

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## **INTRODUCTION:**

Type 2 lunate has a facet between the lunate and the hamate. This articulation forces the midcarpal joint to work in a flexion-extension plane and restrict the rotation and translation, which may contribute to the reported association of scapho-trapezium-trapezoid (STT) osteoarthritis (OA) with this lunate type. We aimed to investigate whether involvement or progression to stage IV (pantrapezial) disease was affected by the lunate type in patient with trapeziometacarpal (TMC) OA.

## **METHODS:**

A retrospective review was performed on all patients with a diagnosis of TMC OA confirmed on plain radiographs and computed tomography (CT) at our institution. We classified the lunate type based on the presence of the facet detected on both coronal and sagittal CT images. We compared the incidence of STT arthritis between patients with type 1 and 2 lunates. A multivariate analysis was performed on factors associated with STT OA, such as age, sex, severity of TMC OA, and the lunate type.

**RESULTS:** A total of 121 wrists (23 men and 98 women with a mean age of 69 years) were included; 40.5% (n=49) of wrists had type I lunate, and 59.5% (n=72) had type II lunate. Involvement of the STT joint was more common in patients with type 1 lunate than in patients with type 2 lunate (26.5% vs. 8.3%,  $p = 0.007$ ). The multivariate analysis indicated that age, severity of TMC OA, and type 1 lunate were independently associated with involvement of STT OA.

**DISCUSSION AND CONCLUSION:** Involvement of STT joint was more common in type 1 lunate in our patients with TMC OA, contrary to the expectation. Since TMC arthrodesis can cause OA of the adjacent joints, further studies may be necessary on factors associated with progression to pantrapezial disease in patients with TMC OA.