RAPID RESEARCH

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Sesamoid Bones

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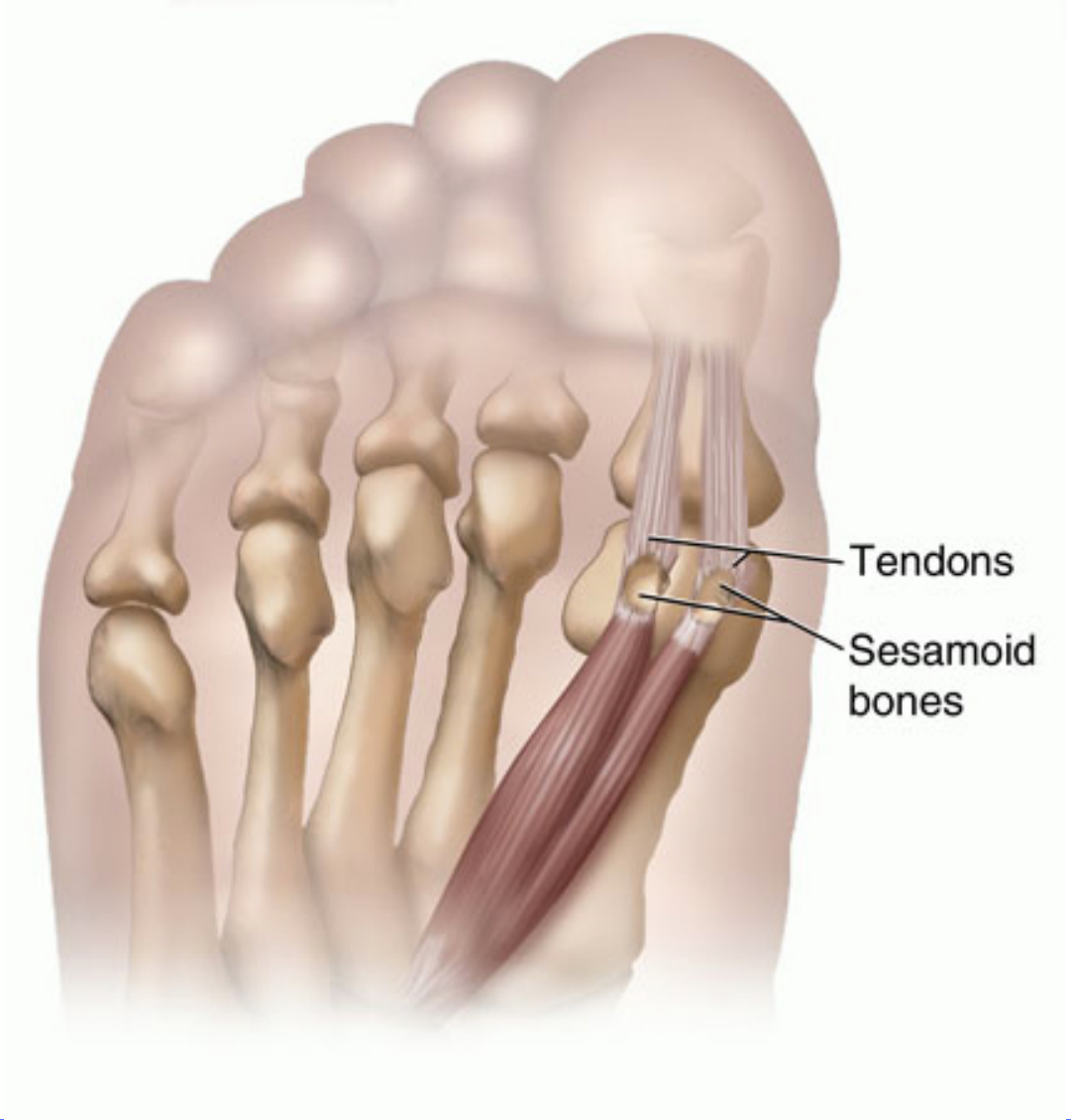
SESAMOID BONE SUBLUXATION & HALLUX VALGUS

DECEMBER 2023

Click for Full Text (Kim et al. 2023)

This study investigated the relationships of sesamoid bone subluxation with the hallux valgus angle, intermetatarsal angle, and metatarsophalangeal joint congruency in hallux valgus patients.



KEY FINDINGS

205 hallux valgus patients who underwent radiographic evaluation and subsequent hallux valgus correction surgery.

Intra-rater Reliability:
ICC values for Observers 1 & 2 were moderate.

For all observers, RT & LT distal metatarsal articular angles had lowest ICC values.

All sesamoid subluxation kappa values were above the threshold for good observer agreement.

Inter-rater Reliability:
ICC values were at least moderate.
ICCs were similar for the first proximal phalangeal articular angle measurement.
Among all measurements, the right and left distal metatarsal articular angles had the lowest ICC values.

MAIN TAKEAWAYS

Measurements of the hallux valgus angle, interphalangeal angle, and joint congruency exhibited high interobserver and intraobserver reliabilities in this study.

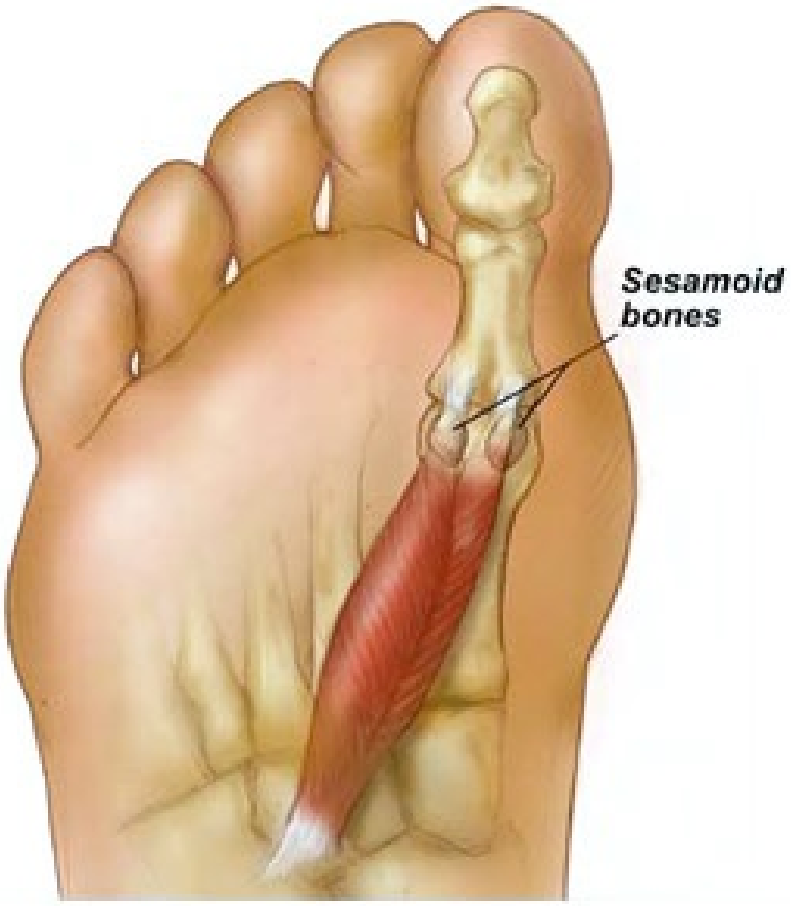
They also showed correlations with sesamoid subluxation grade.

SESAMOID AVASCULAR NECROSIS AND STRESS FRACTURE TREATMENT

DECEMBER 2023

Click for Full Text (Scala et al. 2022)

This case report describes a 17-year-old football player with avascular necrosis (AVN) in both the tibial and fibular hallux sesamoids with a concomitant non-displaced stress fracture of the tibial hallux sesamoid



KEY FINDINGS

X-rays demonstrated no sesamoid fracture or plantar plate tear.

MRI found AVN in both hallux sesamoids with non-displaced stress fracture of the tibial hallux sesamoid

Patient underwent open sesamoid core decompression with an application of concentrated bone marrow aspirate and amnion matrix.

Physical Therapy:

Initial 6-weeks gradually introduced loading to the medial forefoot.
9 weeks: 1st MTPJ ROM was 80% of normal with some stiffness in dorsiflexion.
15 weeks: ROM improved, with mild pain on single-limb heel rise.
Further 6 weeks: patient was advised to slowly progress to light-impact activities.
At discharge: Pain-free ROM in 1st MTPJ (20 deg of flexion & 70 deg extension.
The patient returned to full athletic activities at 6 months postoperatively.

MAIN TAKEAWAYS

This case demonstrates core decompression with biologic augmentation as a viable treatment option for sesamoid AVN.

Due to the uncertainty of nonoperative management in sesamoid AVN, earlier intervention could be considered as part of a shared decision-making process, particularly in younger active patients.

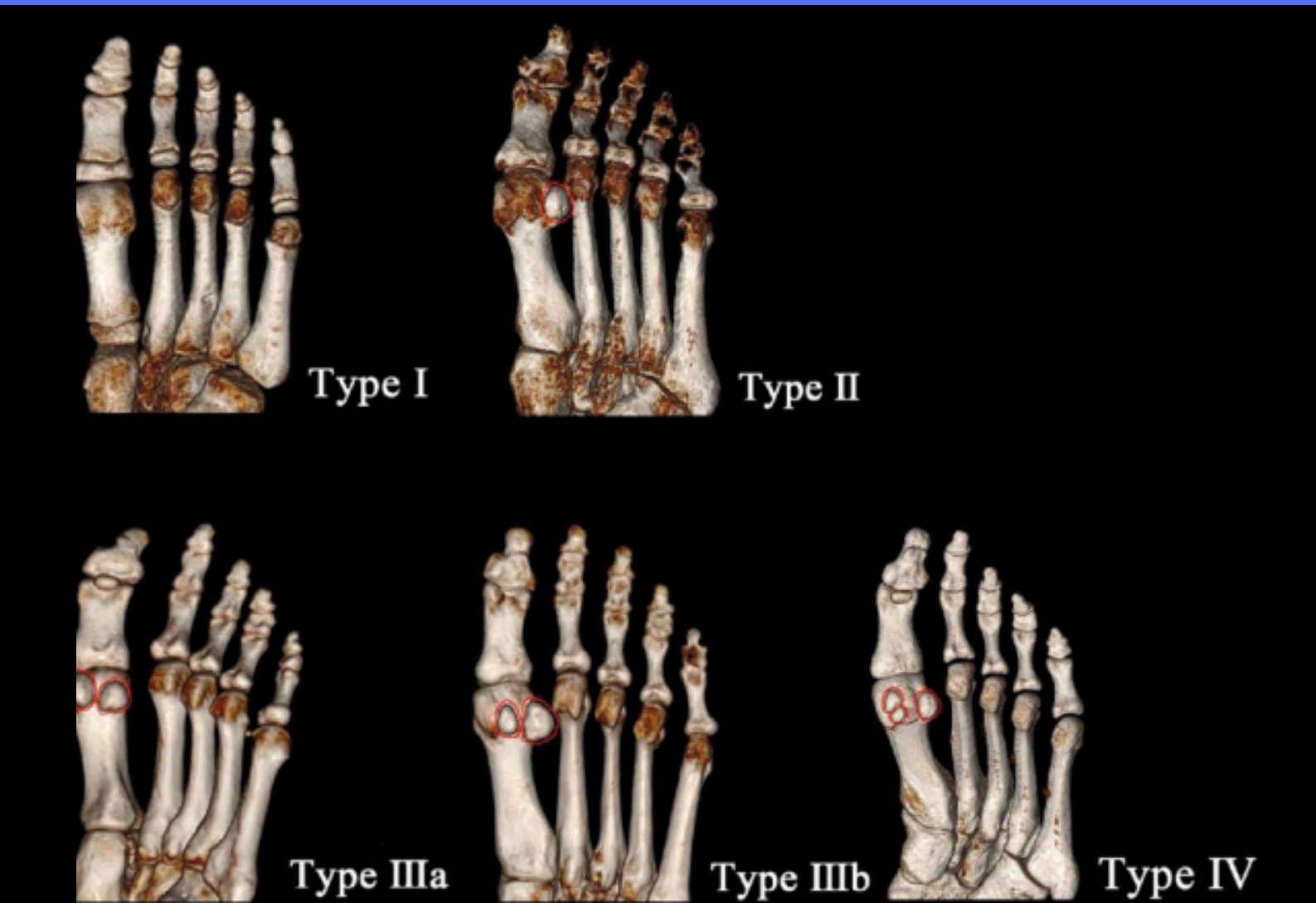
Further research is warranted comparing core decompression of sesamoid AVN with and without biologic augmentation, including longer follow-up

CLASSIFICATION OF HALLUX SESAMOID BONE CORRELATED WITH HALLUX VALGUS SEVERITY

DECEMBER 2023

Click for Full Text (Zhang et al. 2020)

This study evaluated the anatomical morphological characteristics of the HSB which can be helpful in clinical diagnosis and treatment, especially hallux valgus (HV)



KEY FINDINGS

150 X-ray & 3D CT) images consist of 72 left and 78 right metatarsals.

1st metatarsophalangeal joint divided into 4 different types:
Type I (no HSB) [1.3%]
Type II (with one HSB) [0.07%]
Type IIIa (with two HSBs when THB is bigger) [28%]
Type IIIb (with two HSBs when FHB is bigger) [65.3%]
Type IV (with three HSBs) [4.7%]

There was no statistical difference between the left and right sides, except HVA, Meary, and Pitch.

All a, b, c, d, and i have statistical difference between male and female.

Meanwhile, HVA and IMA and HVA and type group have a significant correlation.

MAIN TAKEAWAYS

HVA and IMA and HVA and the classification of HSBs have a significant correlation.

Type IIIb has a greater chance of having HV than type I, type II, type IIIa, and type IV.

Hence, the classification and location of HSBs can be an important basis to choose operation methods and provide data index for postoperation evaluation.

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