

Osteochondral Lesions of the Talus Are Common but Not Associated with Functional Impairment in Community-dwelling Elderly Women: A Population-Based Cross-Sectional Study

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INTRODUCTION: Osteochondral lesions of the talus (OLT) are frequently detected as incidental findings on radiographs in elderly populations, but their functional significance remains poorly understood. Population-based data on OLT prevalence and clinical relevance in community-dwelling older adults are limited. This population-based study aimed to (1) determine the prevalence of OLT in elderly women, (2) evaluate the impact of OLT on ankle function, and (3) investigate the relationship between lower limb alignment and OLT.

METHODS: This cross-sectional study analyzed 125 women aged 65 years or older from a community cohort in Seongnam, South Korea. OLT was assessed on weight-bearing anteroposterior ankle radiographs and classified by presence and location (medial, lateral, or medial&lateral). For patients with bilateral OLT, classification was based on the more severely affected side, with combined medial&lateral lesions considered more severe than isolated lesions; discordant unilateral lesions (medial vs. lateral) were randomly assigned. Lower limb alignment was measured including hip-knee-ankle angle, tibial anterior surface angle, and talar tilt angle. Ankle function was assessed using the Foot and Ankle Outcome Score (FAOS), which includes five subscales: Symptoms, Pain, Activities of Daily Living (ADL), Sports, and Quality of Life (QoL). Statistical analyses included independent t-tests for group comparisons and correlation analyses between lower limb alignment parameters and FAOS subscales. This analysis was restricted to women as the number of male participants in the original cohort was insufficient for a representative, sex-based comparison. This study was approved by the Institutional Review Board (IRB) and all participants provided written informed consent.

RESULTS: OLT prevalence was 55.2%, with medial location in 27.2%, lateral in 17.6%, and medial&lateral in 10.4%. FAOS did not differ significantly between participants with and without OLT: Symptoms (64.7 ± 15.4 vs 67.5 ± 13.0 , $p=0.29$), Pain (63.5 ± 16.6 vs 66.8 ± 14.5 , $p=0.25$), ADL (65.7 ± 12.6 vs 68.4 ± 12.5 , $p=0.24$), Sports (37.7 ± 28.4 vs 44.9 ± 28.1 , $p=0.16$), and QoL (56.8 ± 23.1 vs 62.3 ± 20.3 , $p=0.17$). Lower limb alignment showed no significant difference between the two groups: HKA angle (3.63 ± 2.61 vs 3.56 ± 3.07 , $p=0.89$), tibial anterior surface angle (89.36 ± 4.35 vs 89.61 ± 4.28 , $p=0.75$), and talar tilt (0.59 ± 1.45 vs 0.94 ± 2.14 , $p=0.27$). Lower limb alignment showed no association with FAOS subscales.

DISCUSSION: This study reveals the prevalence of OLT (55.2%) in community-dwelling elderly women and demonstrates that OLT presence does not affect self-reported ankle function. Lower limb alignment showed no significant relationship with OLT or functional outcomes. Study limitations include the use of plain radiographs, which may underestimate OLT prevalence and cannot reliably distinguish OLT from OA-related subchondral cysts, compared to MRI scan. The cross-sectional design precludes assessment of natural history or causal inference.

SIGNIFICANCE/CLINICAL RELEVANCE: Incidental radiographic OLT in elderly women is not associated with functional impairment. These population-based findings are consistent with a conservative, non-operative management strategy for incidentally detected OLTs in elderly women.

Table 1. Participant Demographics

	N=125
Number of participants	N=125
Age (years)	73.4 ± 4.8
Osteochondral lesion of talus	
No OLT	56 (44.8%)
Medial	34 (27.2%)
Lateral	22 (17.6%)
Medial & Lateral	13 (10.4%)
Pain VAS (0-10)	1.4 ± 0.7
FAOS subscale	
Symptom	66.3 ± 14.2
Pain	65.4 ± 15.5
ADL	67.2 ± 12.6
Sports	41.7 ± 28.3
QOL	59.9 ± 21.7
Lower limb alignment	
HKA angle (°)*	3.6 ± 2.9
Tibia anterior surface angle (°)	89.5 ± 4.3
Talar tilt angle (°)*	1.5 ± 1.4

*HKA and talar tilt angles are reported as positive for varus and negative for valgus.

Figure 1. FAOS by OLT status (OLT absent vs OLT present)

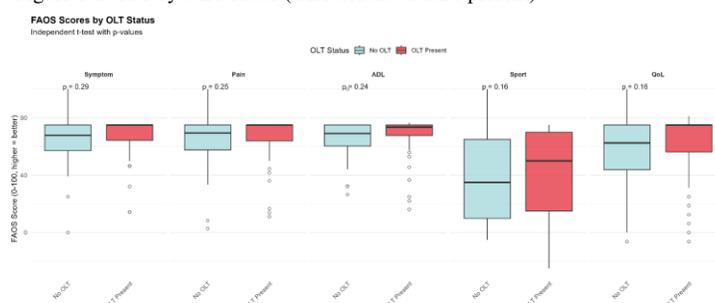


Figure 2. Lower limb alignment by OLT status (OLT absent vs OLT present)

