Thursday: OCD: 8:17 – 8:19 am

Distal Tibia Plafondplasty for Talar Dome Osteochondral Lesion Exposure

Presenting Author:
Paul Peters, MS, MD – Baltimore, Maryland

Additional Authors:
Brent G. Parks, MSc
Lew Schon, MD

Summary
Plafondplasty provides exposure to 37.9± 4.6% and 37.9± 7.7% of total talar dome surface area medial and lateral, respectively. Limited exposure to an additional 14.2%±5 was possible but the posterior 10.6±8% was inaccessible. A limited plafondplasty provides adequate exposure for the majority of talar osteochondral lesions and formal malleolar osteotomies are no longer required. A posterior approach is indicated for access to the posterior 10% of the talar body.

Introduction
The treatment of osteochondral lesions of the talus continues to evolve. Modern chondrocyte transplantation techniques no longer require insertion with a perpendicular approach to the talus surface as with the Osteochondral autograft transplant technique. The use of a limited plafondplasty is commonly employed to adequately visualize the defect. The purpose of this study was to determine the talar access with standard soft tissue exposure and with limited anterior distal tibial plafondplasty. This will assist with preoperative assessment and help guide the need for an osteotomy during the treatment of osteochondral lesions of the talus.

Methods
Talar dome exposure was evaluated using two soft tissue exposures (anteromedial and anterolateral) and two limited anterior distal tibial plafondplasties on twelve cadaver lower-extremity specimens. ImageJ software analysis was used to calculate the accessible surface area and sagittal plane access.

Results
12 cadaveric lower extremities, 7 right and 5 left, were evaluated 2 female and 6 male with 4 bilateral specimens average age 59.6 +/- 11.1 y/o (Range 45 to 75 years). Medial and lateral soft tissue exposures provided 22.3% ± 6.2 and 22.4% ±7.7 access to the total body surface area and 54.3% +/- 12 and 53.3%+/− 14.4 sagittal plane access, respectively. Limited plafondplasty significantly increased the percentage of total surface area medial 37.9% ± 4.6 and lateral 37.9 ± 7.7 (p < 0.05) and sagittal plane access medial 81.6% +/- 9.7 and lateral 80.9%+/-12.7. Limited exposure to an additional 14.2%±5 was possible but the posterior 10.6±8% was inaccessible.

Conclusion
Limited plafondplasty provides adequate exposure for the majority of talar osteochondral lesions and formal malleolar osteotomies are no longer required. A posterior approach is indicated for access to the posterior 10% of the talar body.