

1ST METATARSOPHALANGEAL JOINT ARTHRODESIS WITH BIOINTEGRATIVE HARDWARE FOR HALLUX RIGIDUS WITH MULTIPLE METALLIC ALLERGIES

Dr. James M. Cottom DPM, FACFAS and Dr. Tyler Verdoni DPM, AACFAS
Evolve Health/Florida Orthopedic Foot & Ankle Center

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Patient History and Background

A 74-year-old female presented with persistent right-sided foot pain at the 1st metatarsal-phalangeal joint (MTP). She failed conservative treatments and sought a more definitive procedure. Patient has multiple metal allergies. No medical comorbidities.

Clinical Challenge

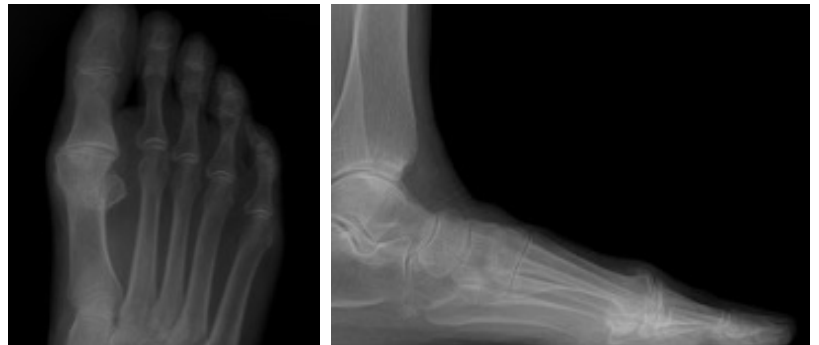
Hypersensitivity to multiple metals prohibited the use of conventional metallic fixation options.

Preoperative Assessment and Treatment Plan

Diagnosis End-stage hallux rigidus and osteophytic spurring around the 1st metatarsal-phalangeal joint.

Surgical Plan Multiple metal hypersensitivity reactions restricted the utilization of conventional metallic plates and screws. Therefore, patient was planned for a 1st metatarsophalangeal arthrodesis with utilization of the biointegrative staples and screws.

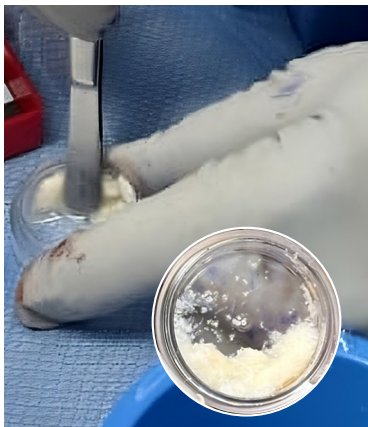
Grafting Material InduceXT NMP Bioimplant (3cc) placed into the 1st MTPJ to promote fusion.



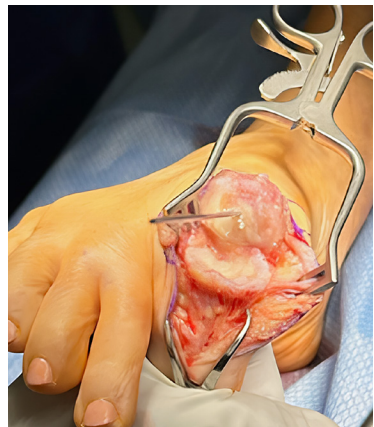
Preoperative weight-bearing images (AP and lateral) showing extensive 1st MTPJ arthritis with joint space narrowing, osteophytes present and dorsal spurring of the 1st metatarsal head.

Intraoperative Technique

During the procedure, InduceXT was hydrated with normal saline on the back table to a toothpaste-like consistency. The graft material was placed into the 1st metatarsal-phalangeal joint and biointegrative hardware was utilized for fixation.



InduceXT hydration with normal saline to a toothpaste-like consistency to allow manipulation of the graft while maintaining stability at the fusion site.



Graft placement of InduceXT into the 1st MTPJ.



Fixation was achieved with 4.0mm cannulated screws inserted using guide wires, providing additional stability to the fusion site.



Final construct with 2 dorsal staples and 3cc InduceXT.

Post Operative Protocol

- **0-4 Weeks:** Non-weight bearing
- **4-6 Weeks:** Progressive weight-bearing in boot
- **6-8 Weeks:** Transitioned to post-op shoe and physical therapy
- **8 Weeks:** In regular shoe with carbon fiber insert

Outcomes at 1 Year Post-Op

Excellent osseous bridging across the arthrodesis site following grafting with InduceXT, especially when utilizing biointegrative technology instead of conventional plates and screws. Patient was pain-free and back to activities of daily living.



Postoperative weight-bearing images of ankle (AP and lateral at 1 Year) showing complete consolidation across the arthrodesis site.

CONCLUSION

- Successful bridging and complete osseous consolidation of the 1st MTPJ using InduceXT hydrated with normal saline.
- The combination of InduceXT and biointegrative hardware provided a successful fusion without the need for metal implants.
- No pain during ambulation and patient was back to full activities at 1 year post-op.

This case highlights the capability of InduceXT NMP Bioimplant to facilitate arthrodesis in the forefoot with biointegrative hardware.

