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## Intramedullary Device May Facilitate Improved Bone Fusion



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An intramedullary device with the ability to contract on its own may mean improved outcomes for the treatment of hammertoe deformity.

The fact that the Intramedullary Fixation Scaffold (IFS<sup>™</sup>) System is the only implant on the market that can shorten on its own, minimizing the risk of gap formation, according to the product's manufacturer Metric Medical Devices. The tubular fenestrated intramedullary bone fixation implant and ingrowth scaffold are made of shape-changing nitinol, which is immediately active when implanted. It is the only bone scaffold for interdigital fusion, according to the company.

The 2.5-mm IFS comes in a sterile kit that includes the necessary instruments to prepare the surgical site, implant the device and fixate adjacent joints.

Walter Strash, DPM, finds the IFS effective at addressing some common challenges associated with arthrodesis of the proximal interphalangeal joint (PIPJ), problems that are most often due to inadequate compression across the arthrodesis site.

The IFS "locks into bone, ultimately creating bony ingrowth within the device, dynamically pulls bone together and exerts high bone fixation forces," says Dr. Strash, a Diplomate of the American Board of Foot and Ankle Surgery, who is in private practice in Texas.

Paul Stone, DPM, MBA, says PIPJ fusion offers good postoperative outcomes for treating deformities of the lesser digits and notes there are many qualities of the IFS that he finds appealing.

"The IFS attracted me because of the advantages of being intramedullary, providing compression to enhance the rate and opportunity for successful fusion. With the product being cannulated, this allows a temporary wire to cross the distal interphalangeal joint and metatarsophalangeal joint if necessary, and at the surgeon's discretion," says Dr. Stone, a Fellow of the American College of Foot and Ankle Surgeons, who is in private practice in Colorado.

Dr. Stone describes a recent case in which he used the IFS to correct a rigid hammertoe of the second digit for a man who had been treated with reduction and external frame fixation after suffering a mid-tibial fracture. Dr. Stone used the new implant because the patient did not want pins sticking out of his toes with an external fixator. The outpatient procedure involved a PIPJ arthrodesis and release of the extensor digitorum longus tendon and capsule/hood apparatus. The patient was immediately able to bear weight in a surgical sandal and at two weeks returned to normal footwear with little residual swelling, says Dr. Stone.

Dr. Strash has performed several procedures that involved initial application of the implant for arthrodesis of the PIPJ but finds the IFS particularly valuable for treating patients who present with a failed arthroplasty.

"Patients are typically frustrated and discouraged, and it is very rewarding to be able to offer them a procedure that will fuse their toe in a straightened (rectus) and corrected position that will last and not recur," says Dr. Strash.

The IFS is uniquely capable of preventing delayed unions and nonunions associated with bone fixation, says Dr. Strash. He notes that, "other devices on the market offer 'positioning' of the digit but do not offer a high degree of arthrodesis success. The dynamic compression of nitinol offers high bone fixation forces and maximizes bone-to-bone contact at the arthrodesis site, ensuring success."

Dr. Stone points out that the IFS also allows surgeons greater flexibility in deciding which joint components need additional stabilization and for how long.

"The IFS device is the most versatile hammertoe implant on the market currently," says Dr. Stone.

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