## Inventive System May Facilitate Improved Outcomes In Treating Charcot Deformity

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An innovative surgical approach to treat Charcot deformity may lead to improved outcomes in patients who might otherwise face amputation of diseased limbs.

The Axis Charcot Fixation System is a comprehensive axial fixation system that reportedly gives surgeons key advantages in achieving superconstruct-type fixation of Charcot deformity, according to the manufacturer Extremity Medical. Among the product's features are a parabolic thread design to accommodate bending forces, intramedullary beaming that minimizes stress risers in cortical bone and an X-Clip to act as an intraosseous anchor to create a superconstruct.

Kenneth Seiter, DPM, FACFAS, has experienced extremely positive results using the Axis system.

"What makes the Axis system appealing is that it enables fixation to be performed beyond the zone of injury to include supportive osseous structures not affected by the deformity," notes Dr. Seiter, who is board-certified in foot surgery and rearfoot and ankle surgery by the American Board of Foot and Ankle Surgery.

Dr. Seiter says the Axis Charcot Fixation System offers "greater fatigue strength and higher bending forces not previously available to the market." He points to the superior bending strength of the Axis cannulated beam, which enables surgeons to preserve joint column realignment with initial guide wire fixation.

"This reduces operating (and) tourniquet time, X-ray exposure and potential loss of alignment fixation," notes Dr. Seiter, who is in private practice in Fort Smith, Ark.

Bradley Lamm, DPM, FACFAS, has successfully incorporated the Axis system for many procedures including pantalar fusions, subtalar fusions, Lisfranc fusions, medial column fusions and lateral column fusions.

"Fusion of Charcot neuropathic joints is a very challenging task but with the advent of this Axis screw and clip combination, the soft neuropathic bone can be compressed. This system also provides significant stability due to the locking system of the clip," says Dr. Lamm, a Diplomate of the American Board of Foot and Ankle Surgery, and Chief of the Foot and Ankle Surgery Deformity Center at the Paley Orthopedic and Spine Institute in West Palm Beach, Fla.

Dr. Lamm points to the large size of the Axis screws as one of the unique components of the product. "They are the largest on the market (and they provide) the intramedullary stability required for medial column fusion. In addition, the locking mechanism provided by the clip provides excellent intramedullary stability of the Axis screw," notes Dr. Lamm.

Devon Glazer, DPM, FACFAS, also finds that the Axis System, with its optional X-Clip feature, allows for stable fixation without the need to rely completely on bone in patients who have poor bone quality.

"The beam-clip construct design greatly enhances the quality of fixation even with marginal bone quality. It is quite impressive and has increased my confidence in my reconstruction of these patients," states Dr. Glazer, who is board-certified by the American Board of Foot and Ankle Surgery, and is in private practice in Southern California.

According to Dr. Glazer, the Axis system also features a unique gauge to use when selecting beam size. Additionally, he notes that an awl guide helps position the guide wire down the metatarsal accurately and efficiently. All of these are important considerations when treating patients with Charcot deformity, notes Dr. Glazer.

"The stability benefits along with state of the art targeting and insertion instrumentation set the Axis Charcot Fixation System well above the rest," adds Dr. Lamm.

For Dr. Lamm, the lack of failure may be the ultimate measure of the Axis System's success.

"To date, I have not had a failure of hardware utilizing the Axis screw system," states Dr. Lamm. "To me, this is extremely encouraging data. I have used many other screws and plates from many other systems, which have all failed at one point or another."

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