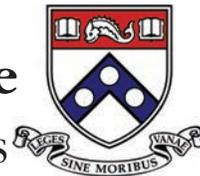


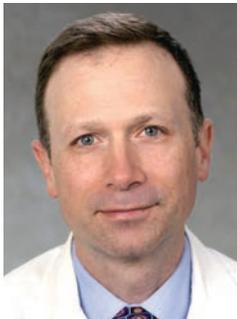


# Orthoplastic Limb Salvage Division Update

Meghan E. Wilson, RN, Stephen Kovach, MD, and L. Scott Levin, MD, FACS



## Orthoplastic Limb Salvage Faculty



Stephen Kovach III, MD



L. Scott Levin, MD, FACS



Samir Mehta, MD

Since its official launch in July 2018, the Penn Orthoplastic Limb Salvage Center (POLSC) has been steadily increasing its patient population into a more defined center. POLSC is headed by Dr. Scott Levin, Dr. Samir Mehta, and Dr. Stephen Kovach, and now has the full-time assistance from an Orthoplastic fellow and Orthoplastic nurse coordinator. Our unique program is still one of only a few formal limb salvage centers across the country that combines the coordination of plastic reconstructive surgery and orthopedics in an effort to reconstruct non-functional extremities and save those at risk for amputation.

Our physicians' liaisons and marketing team continue to work to promote awareness of the program locally to encourage referrals and transfers for limb salvage. In the past year, POLSC has been very active with over 200 new patient referrals specifically for limb salvage or extremity reconstruction. These referrals come from all over; they include internal Penn Medicine recommendations, local outside healthcare facilities who have been steadily referring these challenging cases, self-referring patients who have found us through word-of-mouth and online promotion, as well as international patients coming in through Penn Global Medicine. In 2019, there were over 150 surgical procedures performed under POLSC criteria, including local tissue rearrangements in conjunction with orthopedic reconstruction and vascularized free tissue or bone transfers. 2019 saw a 17% increase in POLSC volume since 2018!

For those cases where amputation is the only solution for a functional limb outcome, Dr. Stephen Kovach continues to expand his Targeted Muscle Reinnervation (TMR) practice in amputated limbs. TMR works by taking the nerves severed during the amputation and rerouting them into the muscles of the residual limb. This process has significantly decreased patients' complaints of phantom limb pain as well as reduces neuropathic pain in the stump including any occurrence of neuromas.

Dr. Samir Mehta continues to manage limb length differences by practicing limb lengthening using a magnetic lengthening nail in our Total Aesthetic Limb Lengthening & Extremity Reconstruction (TALLER) program. Over the past year, the company that created the internal limb lengthening nail has developed a fully weight bearing lengthening rod called the STRYDE nail. Dr. Mehta is able to utilize this nail to correct malunions, nonunions, osteomyelitis, and limb length differences by performing an osteotomy and implanting this magnetic nail. The patient is then able to go home and walk on the affected extremity immediately after surgery. At home, they use an external hand held device where they can manually lengthen the extremity 2-3 times a day up to 1mm per day until the desired length is achieved. This nail is much more patient friendly than the bulky external fixators. In addition to using this new technology on functional issues, Dr. Samir Mehta continues to promote the aesthetics portion of this program for individuals who wish to discreetly gain 3-6 inches of height in an elective bilateral limb lengthening surgery.

The POLSC also works in close conjunction with our orthopaedic joints team. Collaboration with this team includes many limb salvage surgeries after failed or infected total knee arthroplasties done here or elsewhere. We have managed to save and reconstruct several knee joints by clearing infection, if present, and then providing free flap or local tissue coverage with a total knee revision. Dr. Gwo Lee also continues to work closely with Dr. Scott Levin performing free vascularized fibular grafts (FVFG) to hips where avascular necrosis is present. They have had great success in this hip preservation surgery, helping many young healthy adults avoid a total joint prosthetic. Including FVFG and prosthetic knee reconstruction, Dr. Gwo Lee has assisted POLSC with over 30 cases in 2019!

In addition to close collaboration with our joints team, POLSC also works with our Foot & Ankle specialists, orthopaedic oncology surgeons, and vascular surgeons. The

Foot and Ankle service has seen an increase in joint cases with Dr. Daniel Farber, Dr. Keith Wapner, Dr. Kathryn O'Connor, and Dr. Wen Chao over the past year. Dr. Robert Wilson and Dr. Kristy Weber continue to be in close collaboration with POLSC in patients who have osteosarcomas with large soft tissue and orthopaedic deficits after resections. Dr. Benjamin Jackson, Dr. Timothy Clark, and Dr. Venkat Kalapatapu also work closely with POLSC to help ensure adequate blood flow to compromised limbs. Dr. Scott Levin has also increased his work in upper extremity bypass to restore adequate flow in conjunction with performing sympathectomies for severe cases of Raynaud's.

In other news, the Penn Medicine Hand Transplant program successfully performed their 3<sup>rd</sup> bilateral hand transplant in February of 2019. The vascularized composite allograft (VCA) program is run by Dr. Scott Levin and Dr. Benjamin Chang,

and continues to grow as we keep getting inquiries and listing new candidates for donors. Some additional updates for POLSC include adding designated orthoplastic OR time at Presbyterian hospital. This will create uniformity in our complex patients who need more than one surgical specialty during the case. We now have access to efficiently schedule these joint cases and make limb salvage surgery more routine with Penn Medicine. We are also looking forward to the annual Penn Flap course which is a two-day long course in August held in the human tissue lab which focuses on the variety of free flaps available to use for extremity reconstruction. We have shared stories of our patient testimonials on Instagram and Facebook @ PennOrthoplastic. We hope to hold an Orthoplastic Conference at Penn Medicine within the next year and look forward to what great things the next 12 months will bring.



Dr. Scott Levin and Dr. Stephen Kovach working side by side during a bilateral hand transplant case in February 2019.