

Physician's Research Takes Center Stage at 5th International Clubfoot Congress



Thinking of China, most of us would think of this summer's Olympic Games. However, for [Dr. David Hootnick](#) at North Medical Orthopedics and Rehabilitation, China is where he presented his most recent research findings into the cause of club foot—a disorder that affects one in 1000 births. Traveling to Hong Kong August 24-28, Dr. Hootnick participated in three papers at the 5th International Club Foot Symposium as part of the Société Internationale Orthopédique et de Traumatologie World Congress.

Clubfoot, also known as talipes equinovarus (TEV), is a congenital foot deformity affecting the bones, muscles, tendons, and blood vessels of one or both feet. The foot is usually short and broad in appearance and the heel points downward while the front half of the foot (forefoot) turns inward. The heel cord (Achilles tendon) is tight and can appear narrow. The muscles in the calf are often smaller compared to a normal lower leg.

Specializing in determining the root cause of a disease (etiology), Hootnick's club foot research started 35 years ago. In the mid-70's, Hootnick traveled to England to complete a fellowship in pediatric orthopedics at the Hospital for Sick Children in London. While there he conducted research on children with congenital short limbs and discovered a relationship between the bony deformities and the embryonic arterial system.



Research conducted over the last 30 years in Syracuse has revealed a great many orthopedic limb problems—including club foot—have similar arterial basis. “I always believed that many of the congenital bone problems in children might have a common genesis,” said Hootnick. In the last year, Hootnick developed a research collaborative with doctors at Upstate Medical University, St. Louis Children's Hospital, and New York University School of Medicine to determine the etiology (cause) of the disorder.

Hootnick's keynote presentation *Are Talipes Equinovarus (TEV) and Congenital Fibular Dysplasia (CFD) Different Manifestations of Aberrant Vasulogenesis* considered the association between the two arterial anomalies. The study examined the link between anomalies of the anterior tibial artery (ATA) and the incidence of TEV (the absence of the anterior tibial artery) and CFD (a congenital short limb). Hootnick's research affirmed the two separate birth defects may be manifestations of the same embryonic anomaly.

Hootnick presented another paper with coauthors Dr. Matthew Dobbs from St. Louis Children's Hospital and Dr. Russell Crider, Jr. from New York University. *Review of Ischemic Necrosis Following Clubfoot Surgery With Case of Retained Primitive Arterial Rete* presented arteriography of two limbs which had become ischemic necrosis (tissue death resulting from local deprivation of the blood supply) after clubfoot surgery and its relationship to deviations of the vascular blood supply. The study found that although ischemic necrosis following clubfoot surgery rarely occurs in about one in 1000 cases, the associated risk should not deter surgical intervention after failure of more conservative measures to correct CFD.

Dr. Hootnick serves as Clinical Professor in the Department of Orthopedic Surgery and Clinical Associate Professor in both the Department of Anatomy & Cell Biology and the Department of Pediatrics for the SUNY Upstate Medical Center in Syracuse, NY. He has over 40 publications and a visiting professor at the Paulist School of Medicine in Sao Paulo, Brazil in 1987.

Hootnick's professional memberships include a membership on the Board of Counselors for the American Academy of Orthopedic Surgeons and participation as an upstate representative for New York State Orthopedic Surgeons.