RATES: A 10-YEAR FOLLOW-UP FROM THE PROSPECTIVE, CONTROLLED, RANDOMIZED, DOUBLE BLINDED, DNND I AND DNND II TRIALS

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PURPOSE: 10% of over 80 million American patients suffering from painful Diabetic Peripheral Neuropathy (DPN) rely on narcotics for pain relief. We present the 10-year follow-up from the Diabetic Neuropathy Nerve Decompression (DNND) I & II trials to determine the effect of nerve decompression on narcotic reliance and foot ulceration.

METHODS: The DNND I study, a prospective, randomized, patient and rater-blinded, observation group plus same-patient sham surgery-controlled trial with 5-year follow-up, evaluated the effect of nerve decompression on pain. The DNND II study consisted of 10 year follow ups on the same cohort. Narcotic requirements were calculated in Milligrams Morphine Equivalents per day (MME/day) through standardized conversions and podiatric foot exams recorded ulcerations.

RESULTS: Of 2987 screened patients, 138 were enrolled in DNND I - 92 randomized to surgery and 46 to controls. 24 surgical and 12 control patients who participated in all visits were included for analysis. Compared to baseline, at 12 months, surgical and control groups did not experience significant changes in MME/day requirements, but the surgical group experienced a significant reduction of -2.8 (p=0.004) at 56 months, and -23.3 (p=0.0001) at 10 years while controls experienced no change (p=0.96). Compared to control patients, surgical patients had similar mean MME/day requirements at 0 months (p=0.98) and 12 months (p=0.78), but lower requirements at 56 months (p=0.003) and 10 years (p=0.006). Prevalence of foot ulceration was similar between groups at 10 years (p=0.67).

CONCLUSION: Nerve decompression provides long-term analgesic and decreased reliance on narcotics in DPN patients.

PO128. POPLITEAL ARTERY ENTRAPMENT SYNDROME: CURRENT CONCEPTS, SURGICAL STRATEGIES, AND LESSONS LEARNED

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PURPOSE: Popliteal Artery Entrapment Syndrome (PAES) occurs in younger patients, predominantly female athletes and results in complete popliteal artery occlusion with plantarflexion. It remains an underdiagnosed cause of exercise-induced pain. Our group has been treating this condition for over a decade and we will review our experience, outcomes, complications, and strategies that we have developed to achieve satisfactory outcomes.

METHODS: A retrospective chart review is conducted to identify all patients that underwent surgical management for PAES at Boston Children's Hospital and Beth Israel Deaconess Medical Center since 2010. Patient demographics, patient reported outcome measures, diagnostic workup and intraoperative details, complications and final outcomes are analyzed.

RESULTS: A total of 40 consecutive patients underwent surgical decompression for PAES. A vast majority of patients presented with delayed diagnosis and had undergone prior surgery for presumed Exertional Compartment Syndrome. Dynamic ultrasound has been found to be the most reliable diagnostic modality. Intraoperative ultrasound and nerve stimulation have allowed us to delineate key maneuvers that are critical to successful decompression. The most common complication is superficial wound separation. Tibial nerve compression at the soleal sling remains an important differential diagnosis in this patient population.

CONCLUSION: The diagnosis of PAES remains challenging due to its rarity and our lack of understanding of its pathophysiology. The management of these patients requires a collaborative multidisciplinary approach. Surgical management includes a thorough dissection of the popliteal fossa with excision of the deep head of the gastrocnemius muscle and plantaris, if present.

PO129. LONG-TERM OUTCOME OF HAND AND SHOULDER FUNCTION IN CHILDREN FOLLOWING EARLY