Interdisciplinary Team Management Changes Diagnosis and Alters Treatment in Patients with Refractory Peripheral Limb Pain

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BACKGROUND
One third of adults in the United States currently suffer from chronic pain at a huge cost to society (1). Persistent limb pain after injury or surgery is common (2, 3). These patients present a unique diagnostic challenge as the initial trauma can include injury to multiple tissue types such as muscle, bone, and nerves. Identification of the underlying pathology giving rise to the pain is further complicated as many patients have difficulty localizing the pain. This results in a challenging diagnostic process for the clinician, nonspecific diagnosis and generalized, non-targeted therapy for the patient. Our goal was to determine whether the use of magnetic resonance neurography (MRN) imaging of peripheral nerves combined with interdisciplinary team management in complex patients with chronic non-specific limb pain could improve patient care.

METHODS
We performed a retrospective, single center, chart review at Stanford University Medical Center to identify patients who underwent MRN imaging and were discussed by our interdisciplinary team comprised of pain management specialists, peripheral nerve surgeons, and MSK radiologists between January 1, 2015 and November 1, 2018. We extracted demographics (age, sex, race), patient characteristics (age at symptom onset and duration of symptoms), presenting features (limb affected and initiating event), examinations and diagnostic tests performed, and treatment strategies implemented from patient charts. We further extracted the referral diagnosis and the diagnosis after interdisciplinary team evaluation.

RESULTS
A total of 58 patients, 17 males and 41 females, were included in the study and represented complex patients who remained undiagnosed after extensive previous evaluation. The majority of patients presented with lower extremity pain (75%, 43/58) attributed to prior surgery (43%, 25/58). The most commonly identified abnormality on MRN was a nerve signal alteration such as edema, fibrosis or prominent intra-epineural fat, seen in 60% of patients (35/58). After interdisciplinary discussion and review of imaging, multidisciplinary treatment plans were initiated. Nerve targeted surgery was performed in 34% (20/58) cases. The diagnosis changed in 78% of evaluated cases (45/58).

CONCLUSIONS
This exploratory study demonstrates that MRN in combination with interdisciplinary team meetings results in more specific diagnoses providing additional targeted treatment options to complex patients with chronic limb pain. The effect of this approach on patient outcomes is the subject of future studies.

REFERENCES