Do Peripheral Nerve Sizes Correlate with Optic Nerve Sheath Diameter?

Ellen Asselin, MSIV
University of California Davis

Introduction
There is an arbitrary threshold of optic nerve sheath diameter (ONSD) used to identify increased intracranial pressure (ICP) in emergent settings.

Hypothesis
Peripheral nerve size varies significantly with ONSD in patients with normal ICP

Methods
• 75 patients with no history or subjective evidence of increased ICP were scanned
• Estimated cross sectional area of median, ulnar and sciatic nerves and ONSD were collected
• Data were analyzed via simple linear regression

Results
The graph below shows the correlation between median nerve size (mm) and ONSD (mm²). p-val= 0.0330

Discussion
Ulnar and sciatic nerves were not good candidates due to difficulties with patient positioning.

Median nerve size CSA varied significantly with ONSD, while ulnar and sciatic nerve CSAs did not.

Clinical significance uncertain; less useful for patients with baseline ONSD <3.5mm.

Main Finding: In a sample of patients with subjectively normal intracranial pressure, median nerve size varied significantly with optic nerve sheath diameter.