

Identification of a New Segment of the Trochlear Nerve

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Introduction: The trochlear nerve is important to preserve during approaches to the skull base. Traditionally, this nerve has been divided into cisternal, cavernous, and orbital segments.

Materials and Methods: Twenty latex-injected cadaveric sides (10 adult cadavers) were dissected with the aid of an operating microscope. Standard microdissection techniques were employed to examine the course of the distal cisternal segment of the trochlear nerve.

Results: In all specimens, a fourth segment of the trochlear nerve was identified. This part of the nerve coursed between the entrance of the trochlear nerve into the posterior corner of the oculomotor trigone, and the posterior wall of the cavernous sinus. This segment of trochlear nerve was, on average, 3 mm in length.

Conclusions: We have identified a new segment of the trochlear nerve not previously described. We propose that this be referred to as trigonal segment. Hence, the new proposed classification would be cisternal, trigonal, cavernous, and orbital. Knowledge of the microanatomy of the trochlear nerve may be of assistance to the skull base surgeon, especially during entrance into the cavernous sinus.