

THE SINGULAR CANAL: A VALUABLE LANDMARK IN SURGERY OF THE INTERNAL AUDITORY CANAL

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The singular canal transmits the posterior ampullary nerve between the inferior part of the internal auditory canal IAC and ampulla of the posterior semicircular canal. The anatomy of the singular canal was studied in temporal bone dissections, in surgical dissections, and in high resolution computerized tomography scans. Measurements were taken for distances between the origin of the singular canal in the IAC, the porus acousticus, the vestibule, and posterior canal ampulla. The location and importance of the singular canal are demonstrated for retrosigmoid IAC vestibular neurectomy, retrosigmoid acoustic neuroma surgery, and transcochlear cochleovestibular neurectomy. The main purpose for the use of the retrosigmoid approach to the internal auditory canal during vestibular neurectomy and excision of acoustic neuromas is preservation of hearing. A major concern when the contents of the internal auditory canal are exposed through this approach is fenestration of the labyrinth, which results in sensorineural hearing loss. In the retrosigmoid approach, the singular canal has been found to be a vital landmark in prevention of fenestration during surgery of the internal auditory canal.