INTRATYMMPANIC GENTAMICIN IN VESTIBULAR SCHWANNOMA CASES

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BACKGROUND

• The effectiveness of intratympanic administration of gentamicin (ITG) routinely used in patients with intractable Ménière's disease.

• 1996 Brantberg et al.: reported the use of ITG in an elderly patient with a grade 2 vestibular schwannoma (VS) who refused microsurgical tumor resection.

• 2007 Mans Magnusson et al.: suggested the use of preoperative vestibular ablation with ITG and vestibular 'prehab' to enhance postoperative recovery in VS cases without preoperative vestibular areflexia (irrespective of preoperative vertigo).

• 2013 Gianuzzi et al.: reported their experience with ITG in 4 elderly patients with small non-growing VS but incapacitating vertigo. In all 4 cases incapacitating vertigo disappeared, but 1 patient experienced persisting unsteadiness.

• Rationale: to accelerate progressive decline of labyrinthine function secondary to the VS. Since these VS are not growing and on a wait-and-scan policy, vertigo symptoms are not expected to be caused by progressive vestibular nerve function decay.

CASE REPORT

• A 54-year-old male patient reported to our tertiary referral neurotology clinic because of incapacitating vertigo spells and instability.

• VOG: spontaneous or positional nystagmus in left-sided roll-test and right-sided Dix-Hallpike manoeuvre.

• Audiometry: Bilateral normal hearing.

• ENG: left-sided vestibular hypofunction.

• Dizziness Handicap Inventory (DHI) at baseline was 70.

• MRI revealed a small VS of 1 cm in the cerebellopontine angle.

• A wait-and-scan policy was advised and no growth could be observed at 6-month follow-up.

• Because of persisting vertigo ITG was performed.

• The patient reported subjective improvement. Hearing temporarily worsened from an 0.5-1-2 kHz pure-tone average of 27 dBHL to 38 dBHL and recovered to 27 dBHL.

• Symptoms recurred after 2 months.

• Microsurgical resection was advised by means of the retrosigmoid approach to enable hearing preservation. The posterior wall of the internal auditory canal was drilled to expose the fundus, total resection was performed while sparing the facial and cochlear nerve anatomically. The patient had an uneventful inpatient stay: facial function was normal (House-Brackmann grade I), no vertigo was experienced, hearing was functionally preserved (pure-tone average of 48 dBHL).

• DHI improved 1 week after surgery to 50.

CONCLUSION

• In VS patients with vertigo, ITG can be offered to reduce symptoms, but peripheral stimulation remains possible because of incomplete deafferentiation. Moreover, afferent signalling due to ephaptic axonal stimulation by the vestibular nerve is not affected at all by this treatment.

• Microsurgical resection, which inevitably results in vestibular nerve section, remains a more effective treatment if vertigo is caused directly or indirectly by the VS.