Balance Issues Pre and Post-op Acoustic Neuroma

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What the inner ear does for you is Inertial navigation.
How balance works

- Inner ears
- Inertial navigation
- Vision – location of environment
- Feet -- sensation
- Brain integrates and predicts
- Cerebellum adjusts
Input streams

Brain also forms internal model - another input
Acoustic Neuroma – what it does

- Starts with irritable nerve
- Progresses to dead nerve
- Very long natural course.
- All treatments speed up rate of damage
Pre-surgery Dizziness
Several possibilities

- No damage to vestibular nerve at start
- Irritable vestibular nerve in middle
  - “quick spins”, motion intolerance
- Partial or complete loss of vestibular nerve (slowly worsens)
  - Chronic spinning, motion intolerance, imbalance
- Possible reduced cerebellar function
  - Mainly in very large tumors
  - Permanent dizzy and imbalance
Expect vertigo and imbalance post-surgery

AN – takes out one ear, but you still have many other inputs
Plasticity and Compensation – adjust to loss of inner ear

• After 2 years, most people with complete loss of inner ear are “hard to tell” from normal people.
  • Rare people with “cerebellar problems” don’t do as well.
Plasticity and Compensation

Dizziness is mainly proportional to amount of change and how recent change occurred

• Lots of change – more dizzy
• Recent change – more dizzy
Treatments produce different rate of change

- Conservative (watch/wait)
  - Slowly evolving damage (10 years)
- Radiation (i.e. gamma knife)
  - More rapidly evolving damage (2 years peak)
- Surgical removal
  - Sudden partial or complete loss of vestibular nerve
Managing symptoms

Medications
Activity and Physical Therapy
Medications

- Vestibular suppressants
  - Antivert (meclizine)
  - Valium (diazepam) like drugs
  - These drugs may slow down compensation

- Medications for vomiting
  - Ondansetron, promethazine

- Medications for irritable nerves
  - Anticonvulsants
Activity and PT – used post-surgery

- Done after surgeon says safe (usually a couple of weeks)
- Speeds up recovery
- Do things that make you dizzy
  - Turn head to side of surgery
  - Practice balance
- Push yourself to edge of getting sick
Exercise protocols with Physical Therapist

“Gaze stabilization” exercises

Exercise protocols with Physical Therapist

- Gait and balance practice

Exercise protocols – do it yourself

- Cawthorne Cooksey Exercises

- “Wii-fit” balance training.

- Tai Chi for balance
Overall

- Expect to be dizzy before and after AN surgery
- Use medications briefly and sparingly
- Regular activity or Physical therapy should be started as soon as surgeon say it is safe
- By 2 years after surgery, most will look “normal”.

Lots more information on my website

www.dizziness-and-balance.com

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