Which treatment in Meniere’s Disease offers the following

- No more vertigo attack in more than 95%
- Hearing preservation
- Reduces drastically bilateral form
- Unsteady less than 10%
Labyrinthectomy
Vestibular Neurotomy

FLOURENS 1824
VESTIBULAR COMPENSATION
Minimally invasive surgery
Postural Syndrom
Head & trunk bias
Locomotion deviation

Perceptive Syndrom
Vertigo
Subjective vertical & Spatial mis orientation

Oculomotor Syndrom
Nystagmus
Skew deviation
Cyclotorsion

Diagram showing cranial structures with labels for vision, vertigo, nystagmus, skew deviation, and cyclotorsion.
VESTIBULAR NEUROTOMY

Middle fossa

Retrolabyrinthine

Retrosigmoid

Minimaly invasive retrosigmoid approach
(Bremond, Garcin, Magnan 1974)
MINIMALLY RETROSIGMOID APPROACH
Retrosigmoid vestibular neurotomy

From 1974 to 2008, out of 519 vestibular neurotomies:
- No intensive care
- No facial weakness
- No anacousis
1 – Vestibular Neurotomy
Safe for the facial and cochlear nerves

Criteria for deciding surgery

- Meniere’ disease
- Medical failure: mean duration 6 years
- Frequency of attacks: daily crisis 38%
  weekly 44%
  monthly 18%
- Impairement of hearing
- Professional status
Incapacitating Vertigo N=283

- Loss their job 18%
- Stop their job 39%
- Reduce activities 28%
- No job 15%

- Stop driving 43%
- Reduce driving 43%
- no influence 14%

Incapacitating vertigo
a serious social evil

- NOT WORKING (59%)
- NOT DRIVING (43%)
- INTER-CRISIS UNSTEATIDINESS (62%)
2 - Meniere’s disease is an incapacitating disorder

Vertigo Results
1985 AAO-HNS guidelines

- Complete: 350 / 335  96%
- Limited: 15 cases
  - 6: Bilateral
  - 5: Relapse  incomplete section
  - 2: Vascular loop
  - 2: Psych.
Patient Satisfaction
283 vestibular neurotomies

- Back to normal
- Vertigo cured, some unsteadiness
- Vertigo cured, significant unsteadiness
- Dissatisfaction
- Further vertigo
- Worse
- 165 cases (62%)
- 61 cases (21.5%)

- 36 cases (9.5%)
- 8 cases (2.5%)
- 13 cases (4.5%)
- 0

FAILUREs & DISSATISFACTION
283 VESTIBULAR NEUROTOMIES

- 5 Bilateral disorders fluctuating hearing: 3 vertigo + hearing: 2
- 1 Relapse: gentamycin
- 8 Severe Unsteadiness with associated disorders
- Aural fullness 4
- Severe Tinnitus 2
- Visual complaint 2
- Chronic Headache 1

Menière’s Disease 99
2 – Quality of life after vestibular neurotomy

Material and methods

- **114 patients (2000-2009)**
- ENT department Hôpital Nord Marseille
- Vestibular neuroectomy by retrosigmoid approach
- Study based on clinic, paraclinic, operative data:
  - **Dizziness Handicap Inventory (DHI)**
  - **Short Anxiety Screening Test (SAST)**
- **Statistics:** SPSS, khi-deux test, Kruskal Wallis test, « t de Student » test, « Pearson » correlations, (p signficative if ≤0,05)
**DHI**

25 questions, Response: 4,2,0.

- Type of handicap physic (7), functional (9), emotional (9).
- Handicap: Minor (0-30), Moderate (31-60), Severe (61-100)

**Variables analyzed with regard to DHI score:**

Age, Operated side, Job, Evolution of symptoms, Anxiety SAST score

**SAST**

10 questions

- Symptoms of anxiety: 4 responses; Notes:1,2,3,4.
- Results: Positif (24-40), Limit (22-23), Negatif(10-21)

---

**DHI Score**

- Total DHI score, **average: 21,09 (0-88).**
- Depending on DHI score, 3 groups:

<table>
<thead>
<tr>
<th>DHI</th>
<th>0 - 30</th>
<th>31 - 60</th>
<th>61 - 100</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>« minor handicap »</td>
<td>« moderate handicap »</td>
<td>« severe handicap »</td>
<td></td>
<td></td>
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<tr>
<td>92</td>
<td>13</td>
<td>9</td>
<td>114</td>
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<tr>
<td>80,7%</td>
<td>11,4%</td>
<td>7,9%</td>
<td>100%</td>
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</tbody>
</table>

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![Image](image_url)
SAST

- **Average 17.06 (10 - 34).**
- Significative relationship with DHI score ($p \leq 0.001$).
- The highest SAST score level, the highest DHI score.

<table>
<thead>
<tr>
<th>SAST 10 - 21 « negatifs »</th>
<th>SAST 22 - 23 « limits »</th>
<th>SAST 24 - 40 « positifs »</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>83</td>
<td>14</td>
<td>17</td>
<td>114</td>
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<tr>
<td>72.81%</td>
<td>12.28%</td>
<td>14.91%</td>
<td>100%</td>
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</table>

**Static Posturography: oscillation surface**

[Diagram of static posturography showing different areas and positions for eyes open and closed, with visual and non-visual conditions.]
3- After Vestibular Neurotomy
New equilibrium strategy
ELITE: the direction of the walk
ELITE: the step
Ocular cyclotorsion towards the operated size

Vertical Perception
Vertical Perception Post-Vestibular Neurotomy

Ocular Tilt Reaction

a: head 1 month
b: eyes: cyclotorsion 1 year
vertical diplopia 1 month
c: vertical perception 1 year
d: walking performances 3 months

ASYMMETRICAL PATTERN TOWARDS THE OPERATED SIZE
VESTIBULAR COMPENSATION
Surroundings Factors ++++

- Age
- Job
- Insurance
- Psychologic
- No claim
- Right / LEFT

Average preoperative hearing
1 year postoperative hearing

5 years
Preoperative hearing loss average 47dB

N = 169

5 years follow up, Postoperative hearing loss average 53dB

N = 114
Sectioning vestibular nerve, section of the efferent cochlear bundle

Outcome of preoperative threshold between 10dB to 20dB

<table>
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<th>19 cases</th>
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<tbody>
<tr>
<td>Unchanged</td>
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<tr>
<td>Decreased &lt; 20dB</td>
</tr>
<tr>
<td>Decreased &gt; 20dB</td>
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</table>

<table>
<thead>
<tr>
<th>1m</th>
<th>1y</th>
<th>5y</th>
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<tbody>
<tr>
<td>16</td>
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<td>11</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
</tr>
</tbody>
</table>
4 - Vestibular neurotomy prevent from hearing loss

Relapses
- 5 cases
- Caloric tests: no complete areflexie
- Incomplete neurotomy

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Complication</th>
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</thead>
<tbody>
<tr>
<td>2nd surgery</td>
<td>compensation</td>
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<tr>
<td>2nd surgery</td>
<td>compensation</td>
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<tr>
<td>Gentamycin</td>
<td>compensation</td>
</tr>
<tr>
<td>Gentamycin</td>
<td>2nd surgery</td>
</tr>
</tbody>
</table>
Bilateral Meniere’s disease

- Natural outcome: 15% to 65%
  mean interval 8 years

Post vestibular neurotomy: 6 cases out of 316
2%
mean interval: 5 years

5 - Unilateral vestibular neurotomy prevent from bilateral evolution
M 55 BRAK.
Retrosigmoid vestibular neurotomy is safe and effective procedure.

The most effective regarding vertigo in Meniere’s disease

The safer regarding the hearing and the contralateral ear