Imperial College London

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Acute vertigo in A&E

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Why differentiating peripheral from central?

- Acute decisions
  - Surgical: ventricular shunt, craniectomy; Matthew et al JNNP 1995;59:287-292
  - Thrombolysis and recanalization therapy

- Good rehab outcome ("ENG criteria, BPPV excluded, Braz J ORL 2008 ;74:241-7")
  - Peripheral lesion 52%
  - Central lesion 21%

Journal of Feline Medicine and Surgery (2009) ■■, ■■–■■
doi:10.1016/j.jfms.2009.10.001

ELSEVIER

jfms

Clinical signs, magnetic resonance imaging findings and outcome in 77 cats with vestibular disease: a retrospective study

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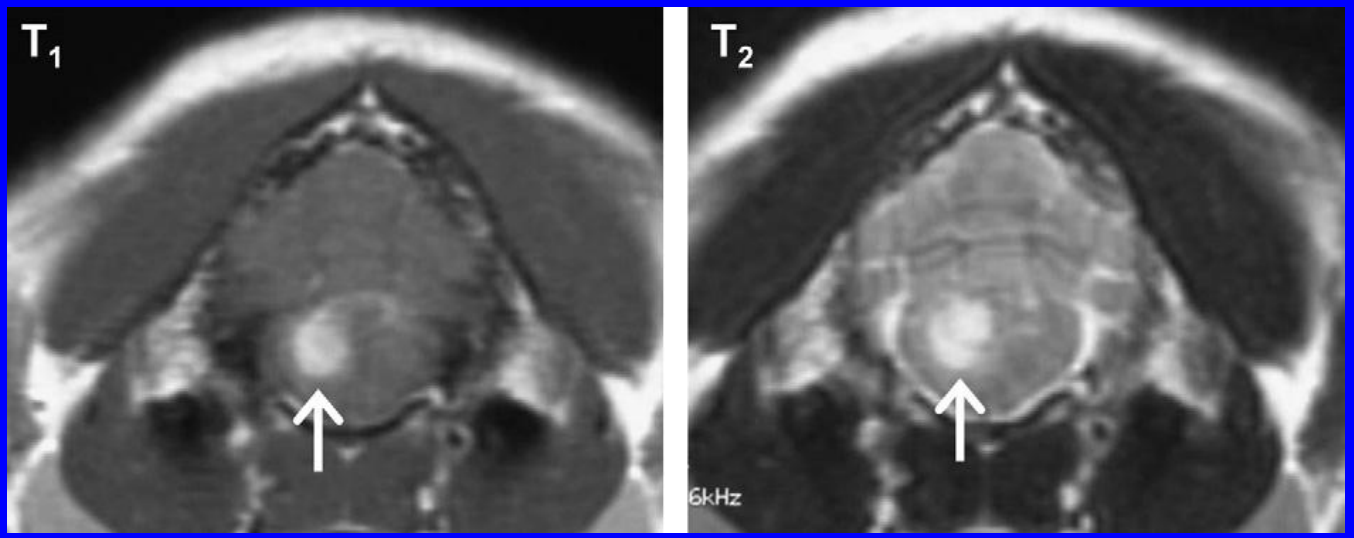
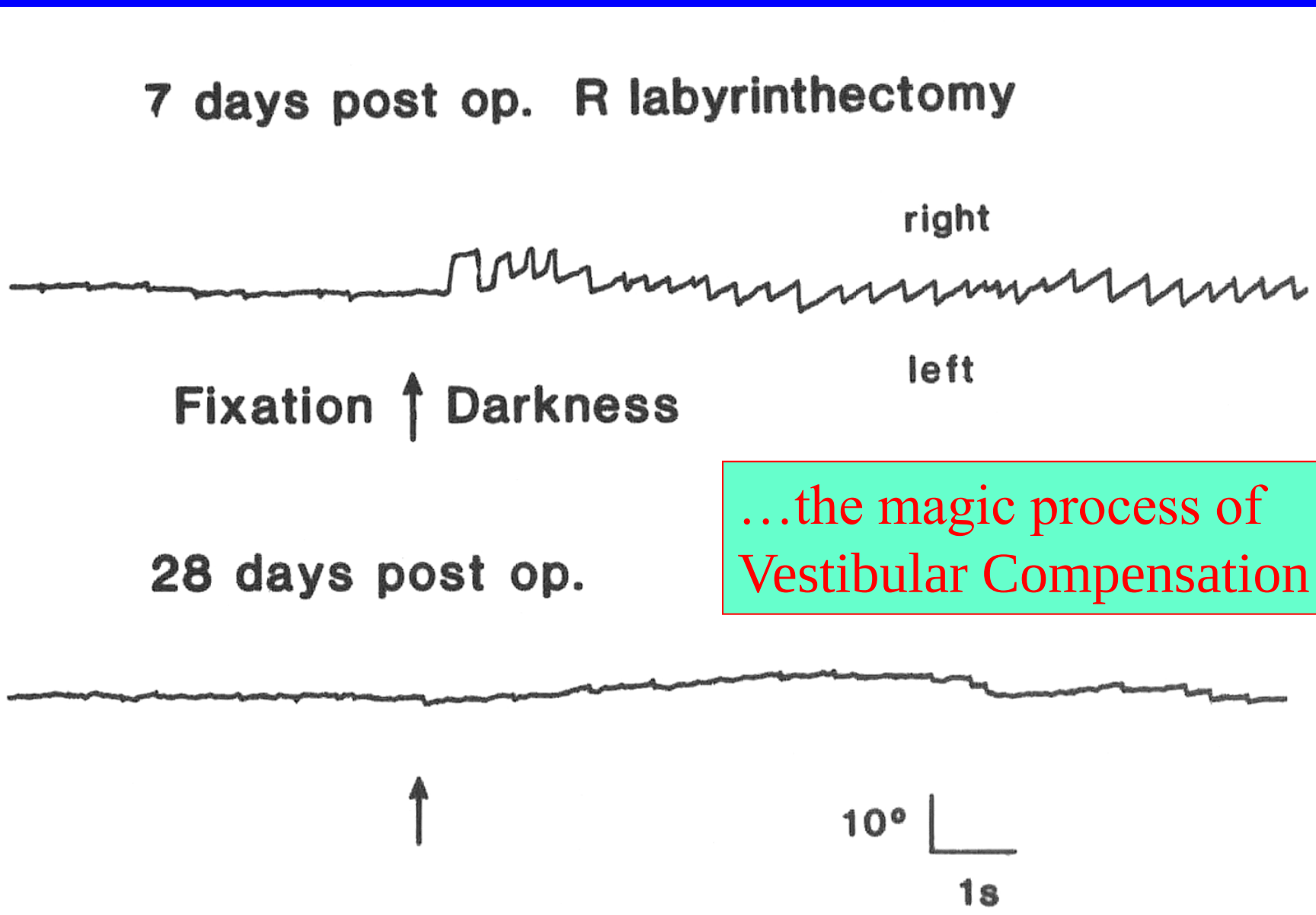
Medical records of 77 cats that had clinical signs of vestibular disease and



“Stroke victim died on Christmas Day after paramedics diagnosed him with ear infection”
Daily Mail, 24 March 2011



…the magic process of Vestibular Compensation

Vertiginous syndromes

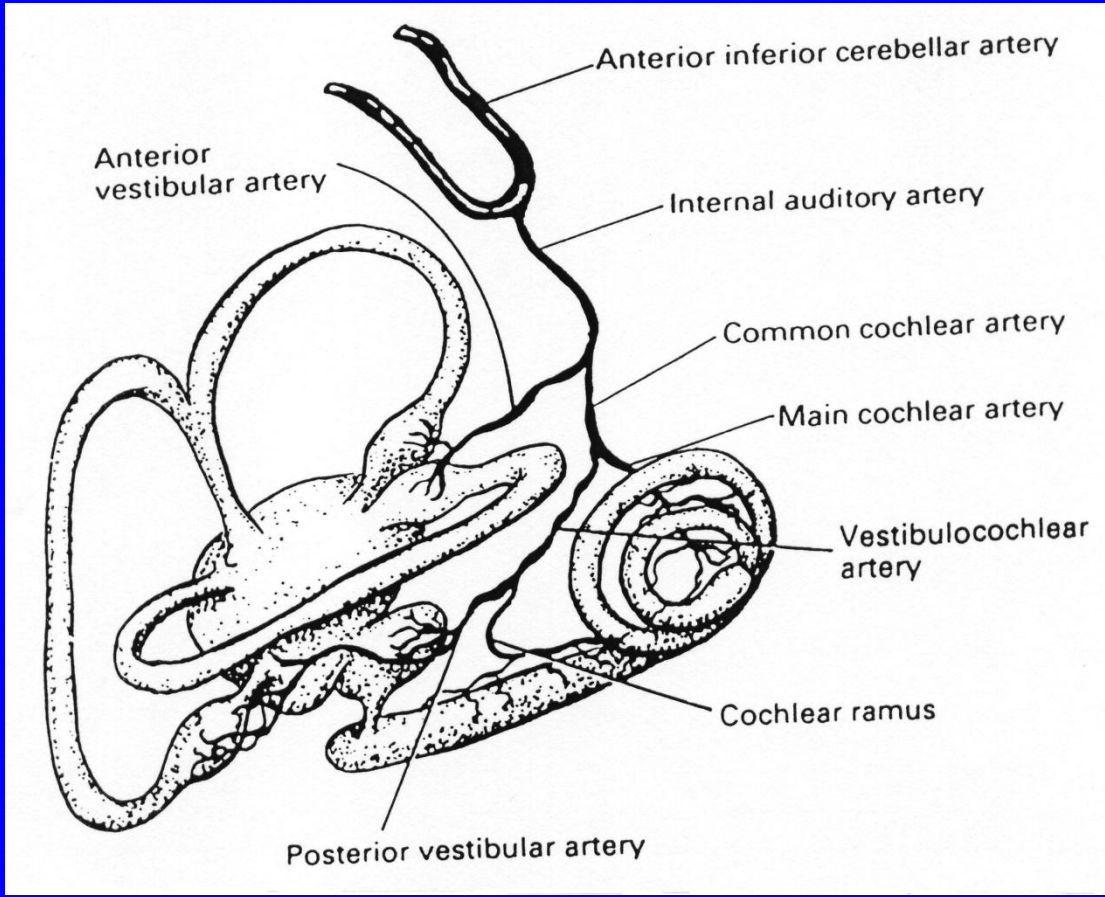
- **Single episode**
  - (eg vestibular neuritis; stroke)
- **Episodic (or recurrent) vertigo**
  - (eg bppv; migraine; Meniere's disease)
- **Chronic dizyy/off balance**
  - Poorly compensated vestibular lesion
  - Gait disorder (examine gait!)

Single episode
(= acute vertigo)

- Hearing spared:
  - Vestibular neuritis (or neuronitis or viral labyrinthitis)

- Hearing involved:
  - Viral infection (e.g. Ramsay Hunt)
  - Vascular (labyrinthine stroke)

A.I.C.A.



AICA infarct = vertigo + deafness

Single episode

- Hearing spared:
  - **Vestibular neuritis** (or neuronitis or viral labyrinthitis)
- Hearing involved:
  - Viral infection (e.g. Ramsay Hunt)
  - Vascular (labyrinthine stroke)

L vestibular neuritis – R beating nystagmus

Looks peripheral, looks like vestibular neuritis but…
can you do anything else to confirm this impression?

Head Thrust Test

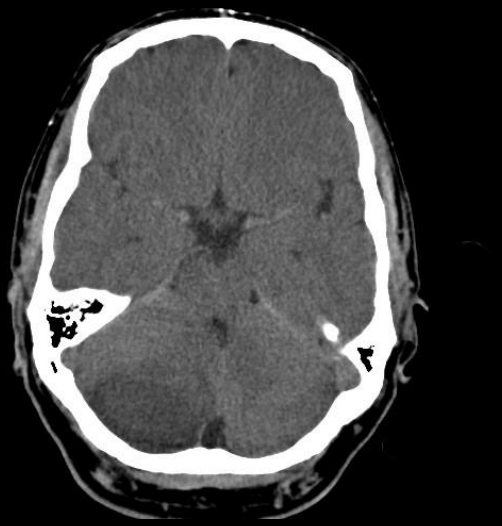
Bronstein and Lempert (2007), “Dizziness”.

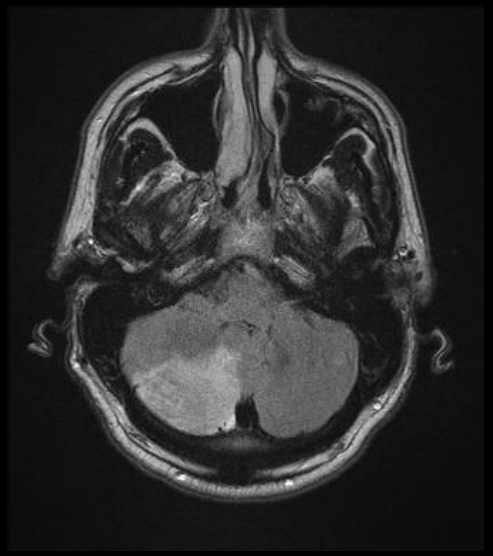
Brain scan needed in acute vertigo:

- Intact head impulse test
- New onset (occipital) headache
- Any central symptoms or signs
- Acute deafness

Seemungal and Bronstein
Practical Neurology 2008

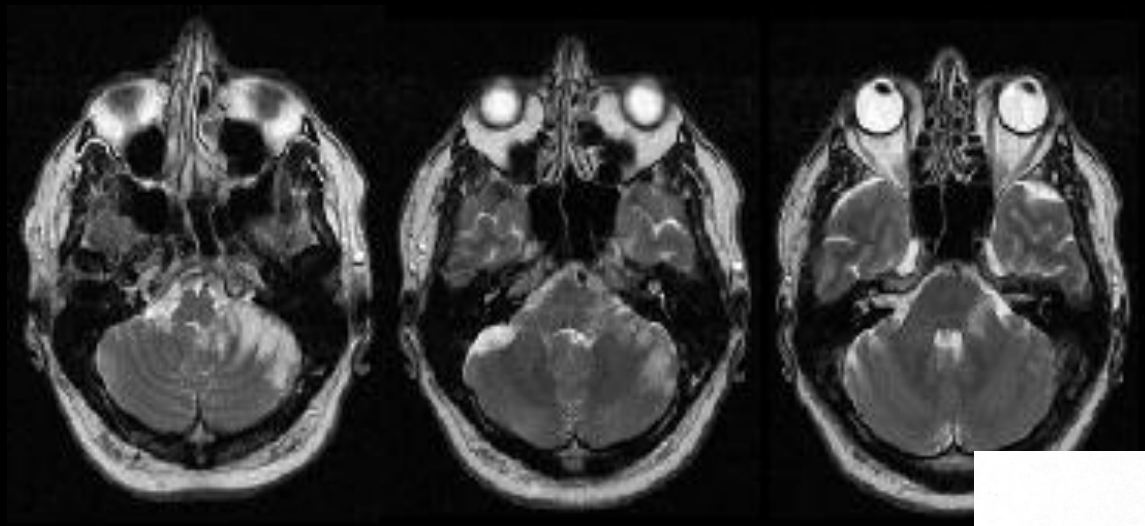
- Acute vertigo middle age man
- Headache – Red flag!
- Normal head thrust – Red flag!!



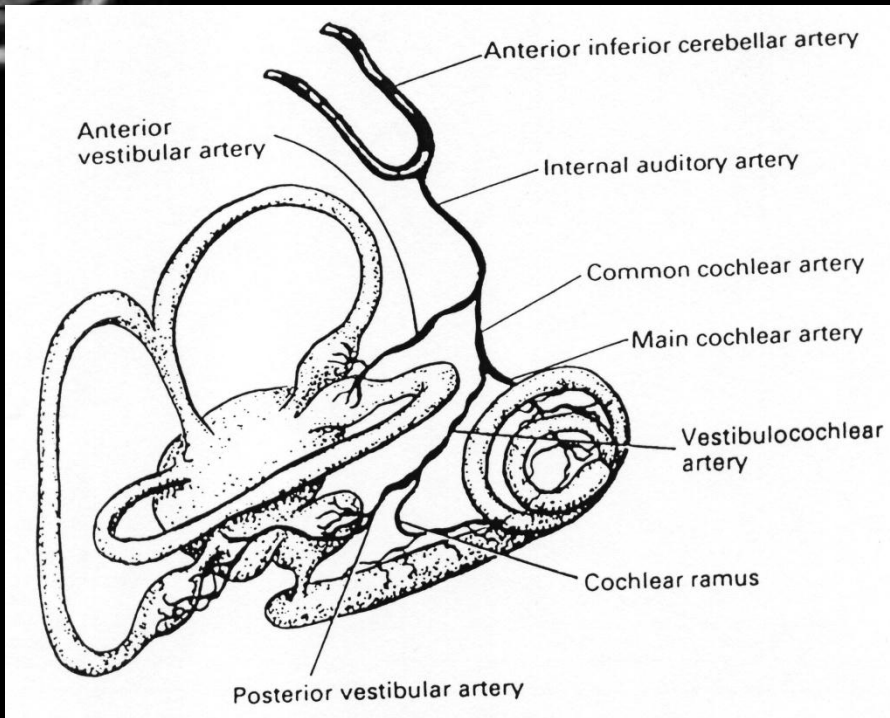


…and normal head thrust **– red flag!**

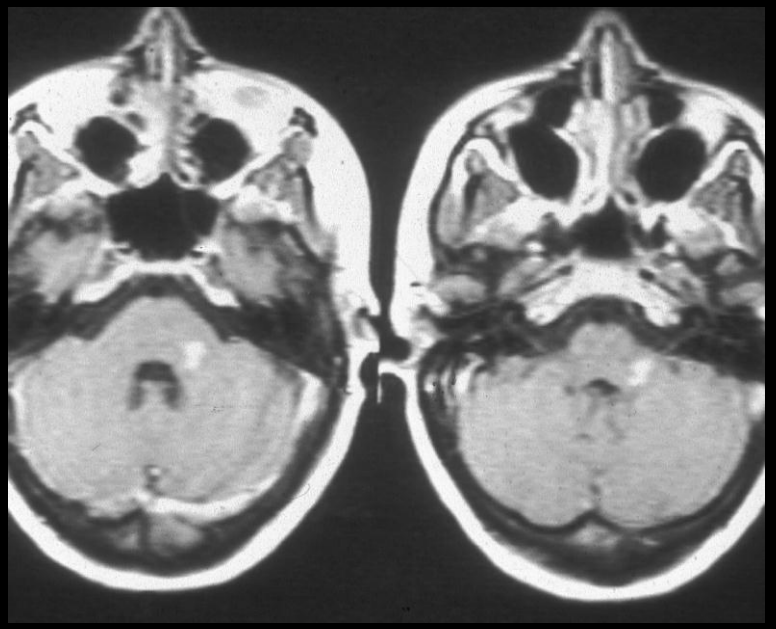
- Acute vertigo
- L deafness – Red flag



AICA



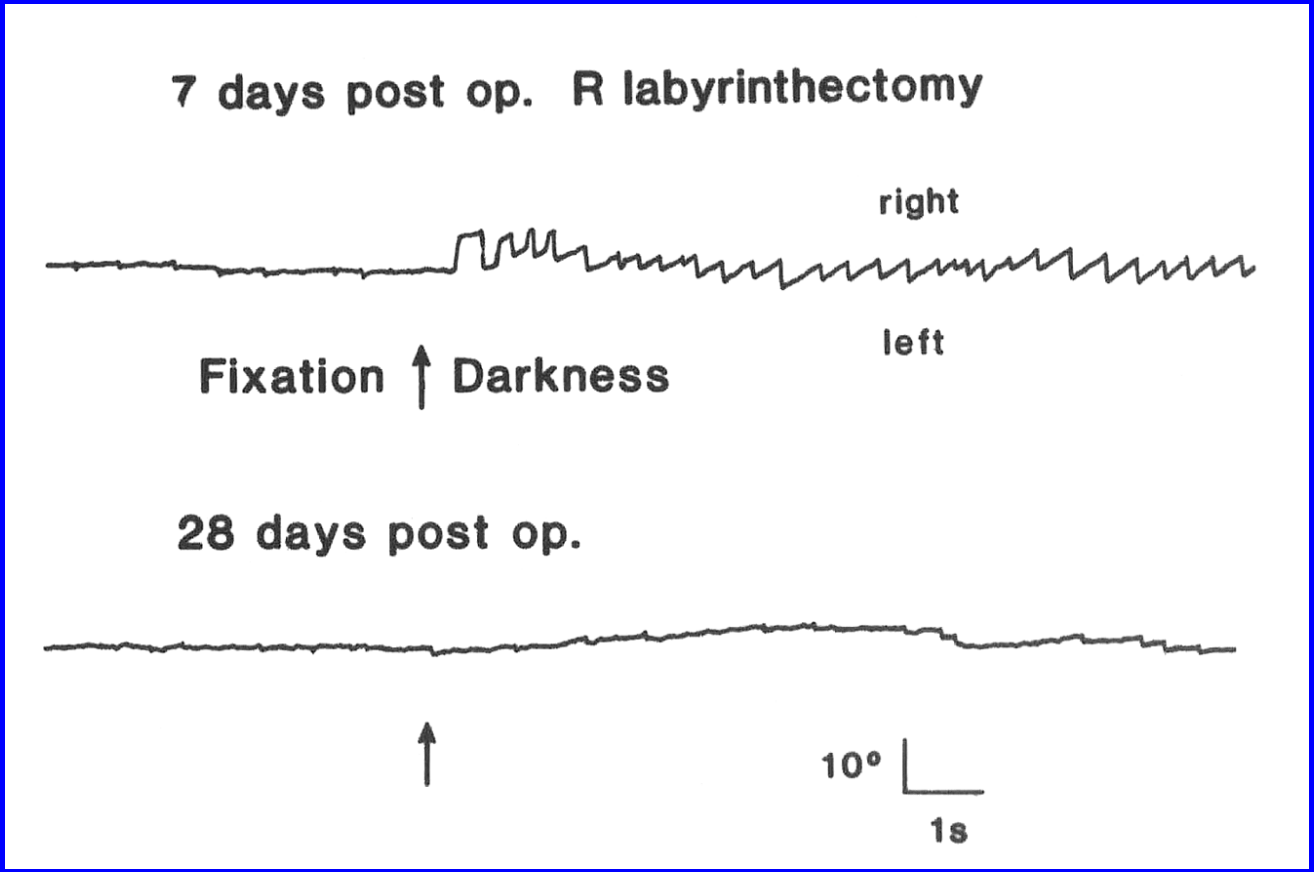
- Acute vertigo
- Tingling L face – Red flag!
- Nystagmus direction? – Red flag!!



R L R L

Treatment of vestibular neuritis

(the process of vestibular compensation)



Treatment of vestibular neuritis

- Promote compensation (self rehab)
- Antie-emetics / vestibular sedatives – 2-3 days max!
- Steroids – probably not!

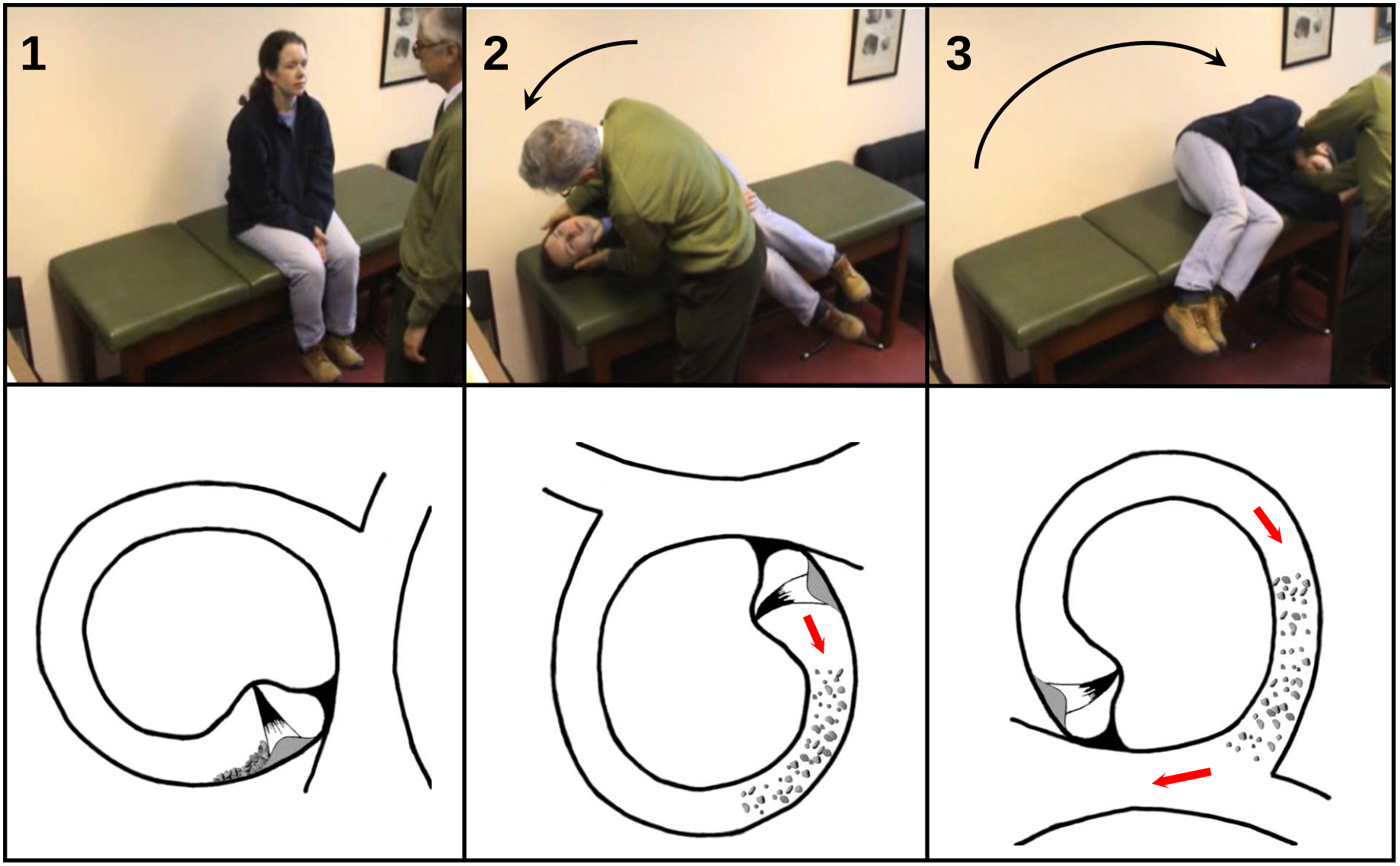
Diagnoses in A&E for Possible Vestibular Neuritis

(12 months – Charing Cross Hospital)

Neuro-otology Diagnosis	n	%
1- BPPV – usual ‘posterior canal’ type	29	32
2- Vestibular Neuritis / Labyrinthitis	14	16
3- History of acute vestibulopathy but normal assessment	14	16
4- Vestibular Migraine	12	13
5- Anxiety	11	12
6- Presyncope	4	4
7- Stroke or Vascular Brainstem events	4	4
8- BPPV – ‘horizontal canal’	2	2
TOTAL	90	100%

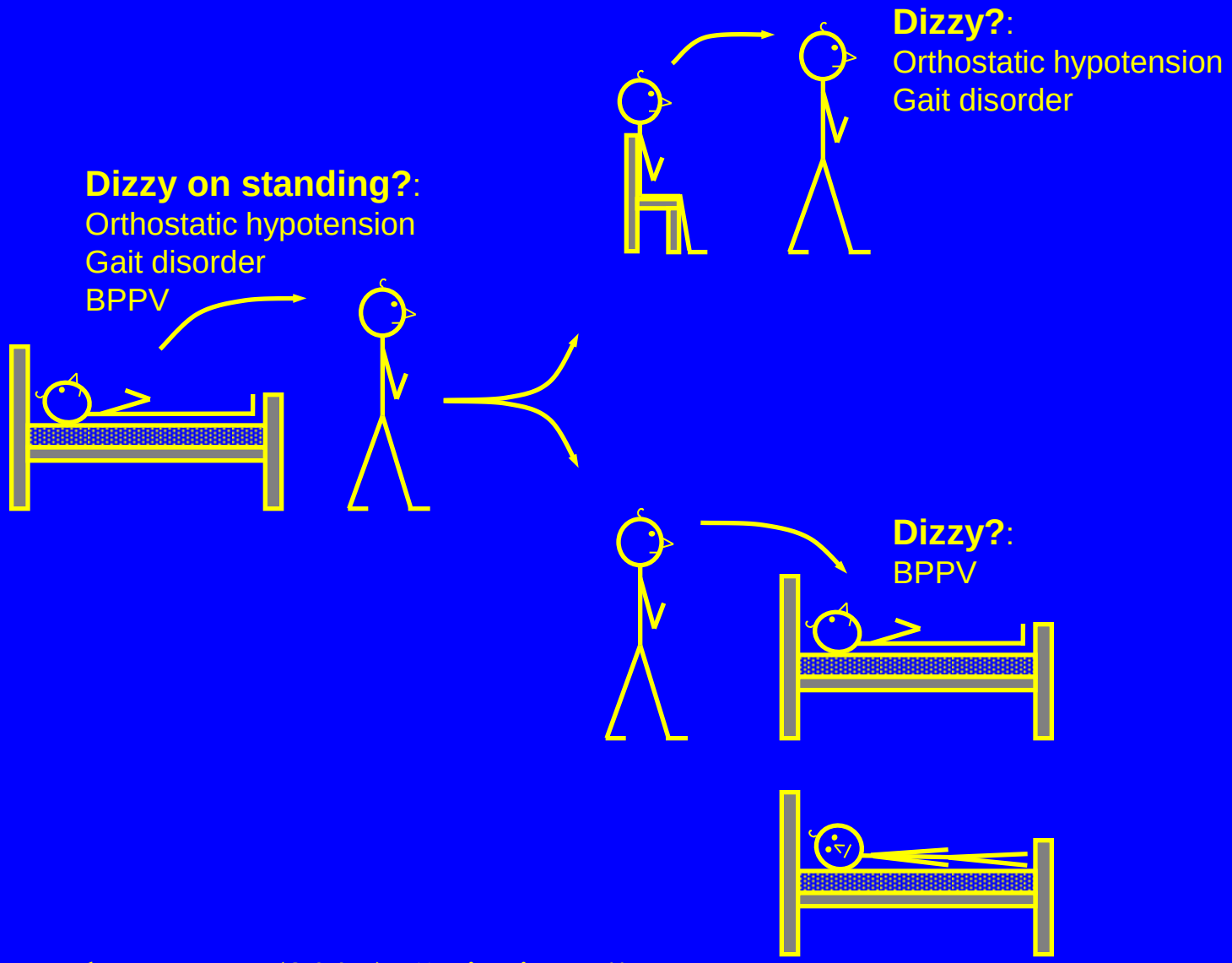
Cutfield et al - **Emerg Med J.** 2011 Jun;28(6):538-9

Positional manoeuvre … and treatment



BPPV: Treatment

Bronstein and Lempert (2007), “Dizziness”.



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HINTS to diagnose stroke in the acute vestibular syndrome: three-step bedside oculomotor examination more sensitive than early MRI diffusion-weighted imaging.

Kattah JC, Talkad AV, Wang DZ, Hsieh YH, Newman-Toker DE.
Stroke. 2009 Nov;40(11):3504-10.

HINTS: a 3-step bedside oculomotor examination:
- Head-Impulse
- Nystagmus
- Test-of-Skew

→ more sensitive for stroke than early MRI in acute vestibular syndrome.

Declaration of interest