Balance Disorders in Adolescents (and Young Adults)

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Outline

• Who are these people and what makes them different?
  – Generally
  – Specifically with regard to balance issues
• What conditions are common in this age group
• What other conditions to consider
• Conclusions
What is adolescence?

• The term covers that period between the onset of puberty and adulthood.

WHO definition = 10-19
Current thinking around transition and transfer of care of young people is concentrating on the ages 13 to 25 years.

Education and health care plan extends to 25 years.

RCPCH considers 13 to 18.

RCP position statement 2014 recognises the need to consider the particular needs of both young adults (20 to 25 years) and adolescents (10 to 19 years).

This talk: 15 to 25 approximately.
Why are they different?

- A period of significant development

- Physical
- Psychological
- Emotional
- Sexual
- Intellectual
And also:

Risk taking
Differences when delivering care

• Ability to present/describe their problem
  – Language – 2 ways!
  – Experience

• May have parents in tow
  – Limit young person’s expression
  – Embarrassing! → reluctance
  – May take over

• Take up of care
  – Term time/holidays
  – Exams
  – ‘Indestructability of youth’
  – Don’t know how to use services
Presentation to a Balance Service

• Not commonly seen in clinic

• Epidemiology:
  – Dizziness – adolescents (13 to 17 years) – period prevalence
    • Dizziness or vertigo? 72%
    • Vertigo - spinning or swaying 20.8%
  
  • Frequency >5 times in 3 months >50%
  • Sufficient to stop leisure activities ~33.3%
  • Off school ~15%

  *(Langhangen et al 2015)*

• The same pathology can occur in both age groups – trauma, drugs, meningitis, vestibular neuritis but.........
Young people are not degenerating!

Therefore the pathology presenting to clinic is different from older adults

With a couple of obvious exceptions.........
BPPV in young people?

- Because young people are not degenerating the otoconia are firmly attached

- BPPV following trauma or infection ONLY!

- BPPV in adolescents and young people is RARE

- True positional vertigo in a young person in the absence of a history of trauma is likely to be due to a posterior cranial fossa tumour or Chiara I malformation

- The presentation warrants an MRI scan
Causes of Balance Disorders in Young People

- Peripheral vestibular causes
- With middle ear disease
  - OME
  - Cholesteatoma
- With inner ear pathology
  - WVA
  - Trauma - e.g. perilymph fistula, barotrauma, surgery
  - Infection - e.g. vestibular neuritis
  - Ototoxic drugs - e.g. aminoglycosides, cis-platin
  - Meniere's disease
  - Auto-immune disease eg Cogan's syndrome
- Without ear symptoms
  - Vestibular migraine
  - Visual problems /ocular disorders
  - Benign paroxysmal positional vertigo
- Central vestibular causes
  - Epilepsy
  - Congenital abnormalities of the skull base eg Arnold-Chiari
  - Infections e.g. meningitis, encephalitis, cerebral abscess
  - Trauma
  - Neoplasia - posterior cranial fossa tumours
  - Heredodegenerative diseases e.g. Refsum, DIDMOAD
  - Demyelination
  - Episodic ataxia 2 (Channelopathy) - CACNA1A - Ch 19p
  - Vestibular processing disorder
    - (motion sickness)
- Non-vestibular
  - Vasovagal
  - Cardiac arrhythmias eg JLN, long QT interval
  - Visual
  - Metabolic eg hypoglycaemia
  - Psychogenic – psychosomatic, hyperventilation, abuse
  - Drugs – caffeine – beware Dr Pepper's and Red Bull!
  - Other – night terrors

With inner ear pathology
- With congenital deafness
- Infective
  - Congenital e.g. CMV, rubella, syphilis
  - Acquired
    - Meningitis
    - Viral labyrinthitis
- Traumatic
  - Fractures of petrous temporal bone
  - Perilymph fistula
  - Barotrauma
- Ototoxic drugs
  - Aminoglycosides
  - Cis-platinum
- Neoplastic
  - Acoustic neuroma
  - Autoimmune
  - Cogan's syndrome

Without ear pathology
- Sensory
  - Vestibular hypofunction
  - Blind/visually impaired
- Central
  - Developmental delay
  - Cerebral palsy
  - Dyspraxia
  - Vestibular processing disorder
- Neuromuscular
  - Still's disease
  - Muscular dystrophy
  - Lower limb deformities
Common in Young People

- Vestibular migraine 29.3%
- Psychogenic 8.6%
- Vestibular neuritis 5.2%
- Visual vertigo
Common in Young People

- Vestibular Migraine
  - Very common cause of vertigo in young people
  - Episodic - can be regular
  - Variable length – minutes to days
  - Can be associated with headache but often acephalgic
  - May be associated with aura, visual symptoms, abdominal migraine, photophobia, phonophobia, prostration
  - May have fluctuating low frequency SNHL
  - +ve FH in >50%
Common in Young People

• **Vestibular migraine**

• **Psychogenic**
  - Psychosomatic
  - Hyperventilation secondary to anxiety
    - Abuse – physical, emotional, sexual
    - High incidence of depression and suicide
      - Anxiety accompanies vertigo
      - Difficult to separate psychological from physical
      - Need treatment not dismissal
Common in Young People

- Vestibular migraine
- Psychogenic
- Vestibular neuritis
  - Less common in younger adolescents
  - Shorter course?
  - Can have prolonged recovery
Common in Young People

- Vestibular migraine 29.3%
- Psychogenic 8.6%
- Vestibular neuritis 5.2%
- Visual vertigo
Common in older people but rare in the young

- BPPV
- Ménière’s disease
- CVA
- Acoustic neuromas
Worth thinking about in the young

- Trauma
- Drugs – caffeine in Dr Pepper’s, coca cola, Red Bull, coffee
- Alcohol, recreational drugs, glue sniffing
Things to remember:

• Adult services start accepting patients at 16 years of age
• Young people lack the experience of the mature adult – symptoms, coping strategies
• Vulnerable group – don’t forget abuse
• Risk takers – drugs and trauma
• Young people are not degenerating – consider pathology of youth
Thank you
References

• Young adult and adolescent patient care  RCP Position statement  July 2014

Illustrations

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