Don't Forget The Bubbles

HEADACHES

Learners Guide

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PRE READING

Please have a read of one or more before your session

www.headsmart.org.uk/symptoms/sam-animation/ (2 min video)

www.nice.org.uk

Quality standard 42 and clinical guideline 150

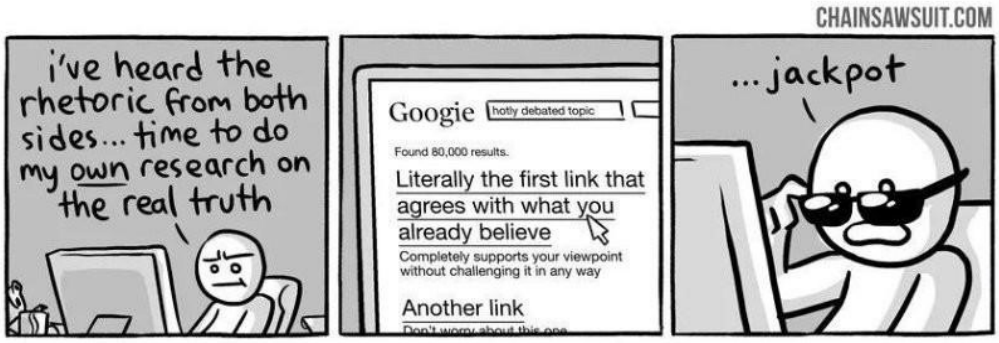
www.youtube.com/watch?v=7FOcgVqXPk8 (16 min video)

www.pemcincinnati.com/blog/headaches-in-the-pediatric-ed/

www.pemcincinnati.com/podcasts/?p=89

www.pemplaybook.org/podcast/pediatric-headache-some-relief-for-all/ (30 mins)
podcast including risk stratification, diagnosis and management of headache

www.researchgate.net/publication/327473427_Cognitive_bias_in_clinical_medicine



The following are more extended resources for paediatric headaches and their management beyond emergency:

www.youtube.com/watch?v=WhKkd-uEJL4&t=1102s (43 min video)

www.youtube.com/watch?v=fpUBfqAyY1A (30 min video)

WHAT ARE THE KEY LEARNING POINTS?

- Clearly identify headaches red flags
- Be able to choose and plan appropriate investigations
- Awareness of cognitive bias when seeing repeat attenders
- Know which headache treatments are likely to be effective

CASE 1

A 12yo boy is brought to ED with a headache. He does not ordinarily suffer from headaches but today came home from school with a throbbing headache on the right side of his head. It is now 8pm and there has been no change. He has never been seen for headaches before but had a number of attendances for abdominal pain between the ages of 5 & 9 years.

On examination you see an afebrile child, holding his head with his eyes closed. His neurology is otherwise normal (GCS 14 M 6 V 5 E 3).

What additional information would you consider important in the history?
What would be your next management steps?
Would you discharge this child?

CASE 2

A 2yo girl is brought to your emergency with a headache. She has been unsettled at night and wakes slapping the back of her head. She has been seen on four previous occasions over a 5 month period with similar presentations (varying grades of staff involved including a paediatric consultant). The first presentation was related to the appearance of her molars, an MRI was booked but cancelled as symptoms had resolved when the molars erupted. Subsequent attendances have been documented as teething.

The parents history corroborates the above. She is waking at night with increasing frequency and have come today because it has been worse over the past week. Full neurological examination is normal and she is developing normally. There are some areas of white bulging on the lower gums.

Are there any features here which suggest additional investigation is necessary?
- **If so, what would you plan?**
- **If not, how do you proceed**

What non-medical features of this cases should we be aware of?

ADVANCED CASE 1 (20 MINS)

A 13yo boy presents with a headache. He has been seen on four previous occasions spanning your hospital and another local emergency department over a 6wk period. His mother is particularly distressed by the headaches as she has previously lost a child. The boy's mother clearly voices her anxieties and feels that things are worsening. This morning she reports witnessing an episode of vomiting with some 'shaky walking'.

It is clear during your assessment that the boy is less concerned than his mother about these headaches. Neurological examination is normal although he refuses to lie down for examination as he fears this will bring the headache back.

How do you proceed, is any further information required?
What investigations are indicated?

ADVANCED CASE 2 (20 MINS)

A 14yo girl arrives immediately following an ophthalmology appointment for a general paediatric review. She has been suffering from mild headaches which have been controlled with simple analgesia for 2 months. These last from 1-4 hours, usually after school and have not worsened over this period. In the past 4 weeks she has become more aware of intermittent visual changes. She sees flashes of colour or 'lego bricks' which fall across her vision. This occurs daily, usually in the afternoon. Her ophthalmology appointment was unremarkable, including fundoscopy.

She is afebrile and lucid with no headache currently. Full neurological examination including co-ordination is normal.

Does this girl fit criteria for additional investigations?
• What would you do?
You are intending to discharge her, what follow up should be arranged?

ADVANCED CASE 3 (20 MINS)

A 10 year old boy presents with a 2 day history of a headache. He was referred by the GP to rule out meningitis. He appears uncomfortable but is alert and cooperative. The pain is throbbing and bilateral with a degree of photophobia. There is nausea but no vomiting. He is coryzal and has a temperature of 37.8C. The heart rate is 105 BPM and oxygen saturation rate 99% in room air. Neurological examination does not reveal any abnormalities and he has no problem lying flat for the exam. There is no meningism. On systemic examination there is only mild costophrenic tenderness.

What is the next best step in the management of this patient?

If a urinalysis is requested it shows microscopic haematuria and microscopic proteinuria but no pyuria.

What is the next step?

ADVANCED CASE 4 (20 MINS)

A 12 year old girl presenting with a 2 month history of headache. The pain is throbbing, bilateral, worse at night and is accompanied by nausea.
She is anxious as the headache is now affecting her sleep. The GP started her on Amitryptiline but she stopped it due to daytime somnolence.
She has a history of chronic abdominal pain. There is a family history of essential hypertension and diabetes. She has long been bullied about her weight. Her BMI is >99th centile.

Are there any red flags in the history?
What is the most likely diagnosis and the differential diagnosis?
What are the most important aspects of the exam?

MCQS

Question 1.

Which of the following is not a sign of raised intracranial pressure when co-existing with a headache?

1
Increasing head circumference in <1 year old

2
Vomiting

3
Behavioural change/irritability

4
Fever

5
Waking from sleep with pain 5. Waking from sleep with pain

Question 2.

What is the investigation of choice in headaches with clinical neurological signs?

1
MRI

2
Non-contrast CT

3
EEG

4
Bloods including infection markers/ clotting profile

Question 3.

In paediatric migraine, what is the most effective single treatment for children presenting to emergency?

1
Analgesia

2
Rest and reassess

3
Modify environmental factors

4
Antiemetic

5
Keeping a headache diary

Take home tips

1. Know the headache red flags both within history and examination, understanding that examination is unlikely to be abnormal
2. Think about the specific cases where a non-contrast CT would be indicated as an emergency and how this is locally arranged
3. In cases where there is some uncertainty but no examination findings you have time, seek opinions/advice if necessary and arrange MRI as the investigation of choice
4. Paediatric migraine may not present with headache initially
5. In paediatric migraine, analgesia and antiemetics together are more effective than either alone
6. Cognitive bias exists for everyone, awareness of this is (at least) half the battle

REFERENCES

www.headsmart.org.uk/

Clinical features suggestive of meningitis in children: a systematic review of prospective data, Curtis et al, Pediatrics 2010

Treatment of pediatric migraine headaches: a randomized, double-blind trial of prochlorperazine versus ketorolac, Brousseau et al, Annuls of Emergency Medicine 2004

www.researchgate.net/publication/327473427_Cognitive_bias_in_clinical_medicine

Children with headache suspected of having a brain tumor: a cost-effectiveness analysis of diagnostic strategies, Medina et al, Pediatrics 2001

www.pemplaybook.org/podcast/pediatric-headache-some-relief-for-all/

www.pemcincinnati.com/blog/headaches-in-the-pediatric-ed/

www.dontforgetthebubbles.com/non-specific-symptoms-in-the-emergency-department-are-you-headsmart/

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