Red Flags and Diagnostic Pearls and Pitfalls in Headache Disorders: Clinical Case-Based Session

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Disclosures

Consulting/advisory board

Allergan, Atheneum, Autonomic Technologies, Cannovex BV, Chordate Medical AB, Eli Lilly, Hormosan Pharma, Lundbeck, Novartis, Sanofi and Teva

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Primary vs secondary headache

Primary

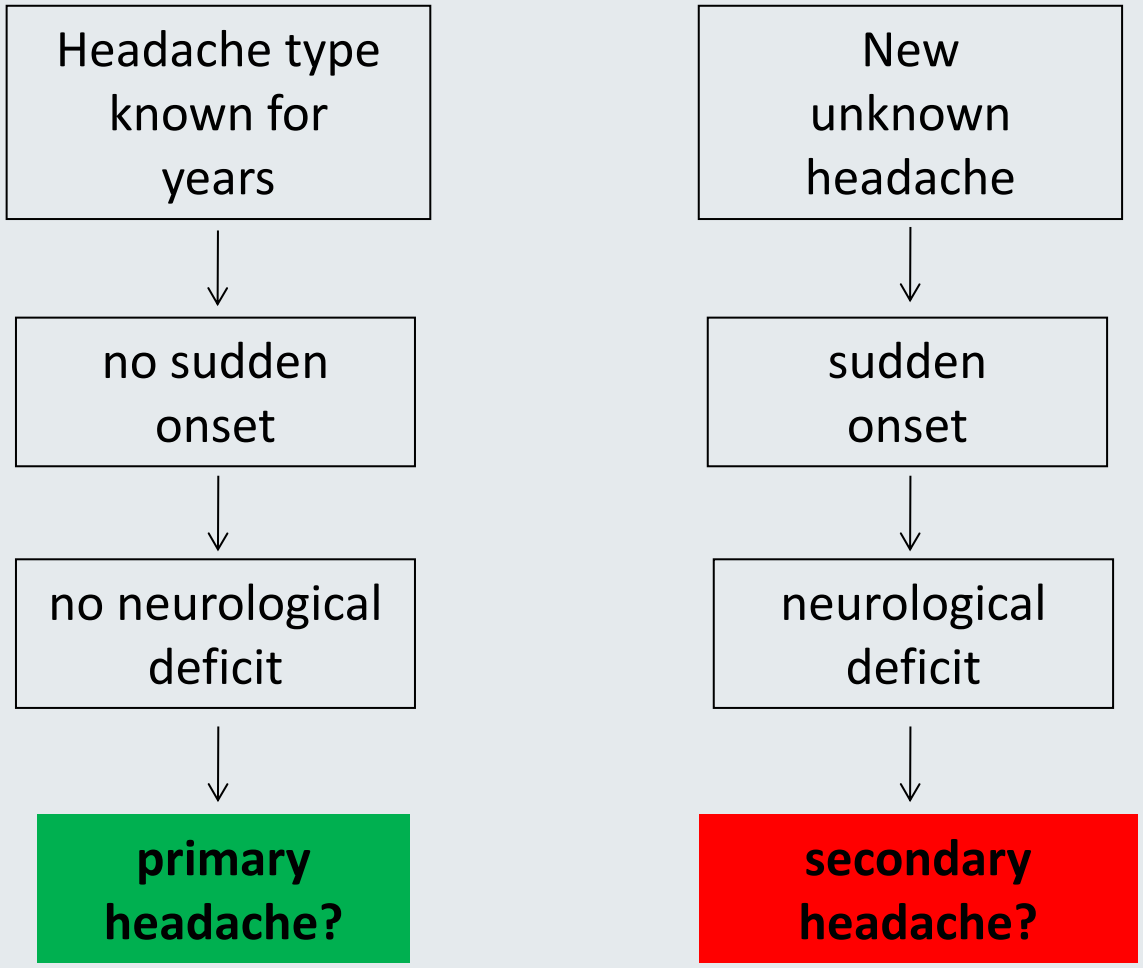
1. Migraine
2. Tension-type headache
3. Trigeminal autonomic cephalalgias
   - 3.1 Cluster headache
   - 3.2 Paroxysmal hemicrania
   - 3.3 SUNCT/SUNA
   - 3.4 Hemicrania continua
   - 3.5 Probable trigeminal autonomic cephalalgia
4. Other Primary Headaches
   - 4.1 Primary cough headache
   - 4.2 Primary exercise headache
   - 4.3 Primary headache associated with sexual activity
   - 4.4 Primary thunderclap headache
   - 4.5 Cold stimulus headache
   - 4.6 External pressure headache
   - 4.7 Primary stabbing headache
   - 4.8 Nummular headache
   - 4.9 Hypnic headache
   - 4.10 New daily persistent headache (NDPH)

Secondary

- Trauma or injury to the head
- Cranial or cervical vascular
- Intracranial non-vascular
- Substances
- Infection
- Homeostasis
- Disorder head, neck, eyes…
- Psychiatric

Cephalalgia 2018; 38: (1): 1-211; www.ichd-3.org; Cephalalgia 2020; 40(2): 129-221

Primary vs secondary headache



Primary vs secondary headache

Systemic symptoms (fever, weight loss)

Precipitated by Valsalva, exertion, sex

Altered consciousness

Age of onset > 50 years

Papilledema

Positional component

Primary vs secondary headache – red flags (SNOOP10 list)

	Sign or symptom	Related secondary headaches (most relevant ICHD-3b categories)
1	Systemic symptoms including fever	Headache attributed to infection or nonvascular intracranial disorders, carcinoid or pheochromocytoma
2	Neoplasm in history	Neoplasms of the brain; metastasis
3	Neurologic deficit or dysfunction (including decreased consciousness)	Headaches attributed to vascular, nonvascular intracranial disorders; brain abscess and other infections
4	Onset of headache is sudden or abrupt	Subarachnoid hemorrhage and other headaches attributed to cranial or cervical vascular disorders
5	Older age (after 50 years)	Giant cell arteritis and other headache attributed to cranial or cervical vascular disorders; neoplasms and other nonvascular intracranial disorders
6	Pattern change or recent onset of headache	Neoplasms, headaches attributed to vascular, nonvascular intracranial disorders
7	Positional headache	Intracranial hypertension or hypotension
8	Precipitated by sneezing, coughing, or exercise	Posterior fossa malformations; Chiari malformation
9	Papilledema	Neoplasms and other nonvascular intracranial disorders; intracranial hypertension
10	Progressive headache and atypical presentations	Neoplasms and other nonvascular intracranial disorders
11	Pregnancy or puerperium	Headaches attributed to cranial or cervical vascular disorders; postdural puncture headache; hypertension-related disorders (e.g., preeclampsia); cerebral sinus thrombosis; hypothyroidism; anemia; diabetes
12	Painful eye with autonomic features	Pathology in posterior fossa, pituitary region, or cavernous sinus; Tolosa-Hunt syndrome; ophthalmic causes
13	Posttraumatic onset of headache	Acute and chronic posttraumatic headache; subdural hematoma and other headache attributed to vascular disorders
14	Pathology of the immune system such as HIV	Opportunistic infections
15	Painkiller overuse or new drug at onset of headache	Medication overuse headache; drug incompatibility

Do *et al*. Neurology 2019; 92: 134-144

Green flags?

- The current headache has already been present in childhood
- The headache occurs in temporal relationship with the menstrual cycle
- The patient has headache-free days
- Close family members have the same headache phenotype
- Headache occurred or stopped more than one week ago

Pohl *et al*. Headache 2021; 61: 300-309

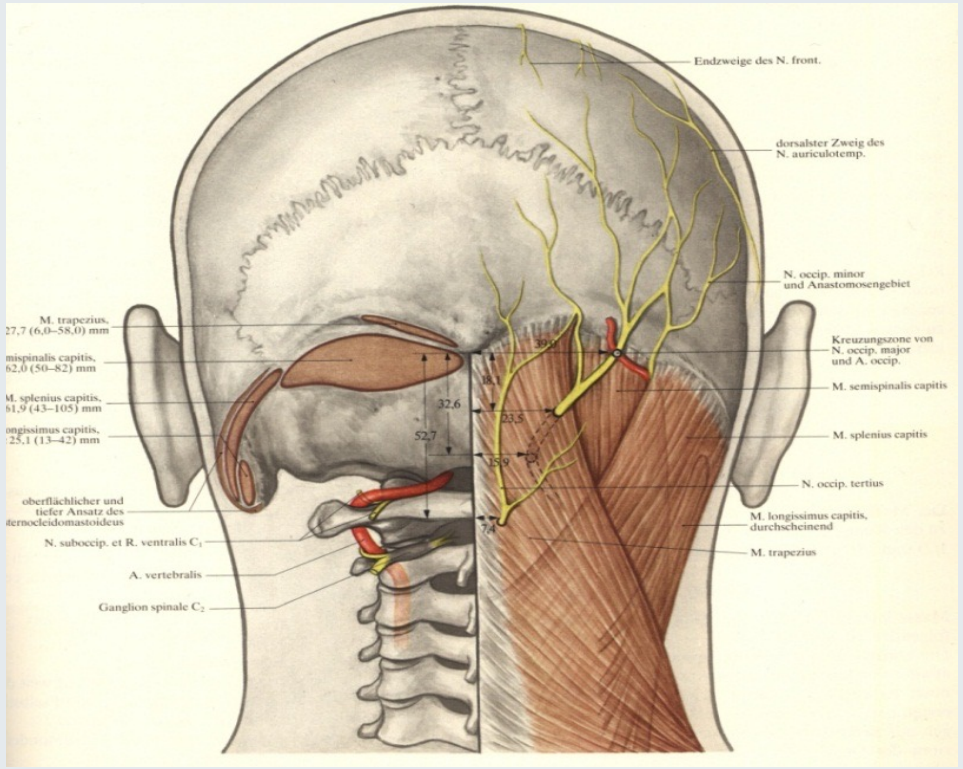
Who should get an MRI?

- **History of migraine and normal examination (n=897; 4 abnormal)**
  - three tumours
  - one AVM
  - **<u>BUT</u>**
    - two of these (tumour and AVM) had seizures
    - one papilloma choroid plexus
    - one glioblastoma

- **Non-migraine patients with normal examinations (n=1825; 2.4% abnormal)**
  - 21 tumours
  - 6 AVM
  - 3 aneurysms
  - 8 hydrocephalus

Alter et al. Neurology 1994; 44: 1353)

Greater occipital nerve block (GON-block)



local anaesthetic + corticosteroid

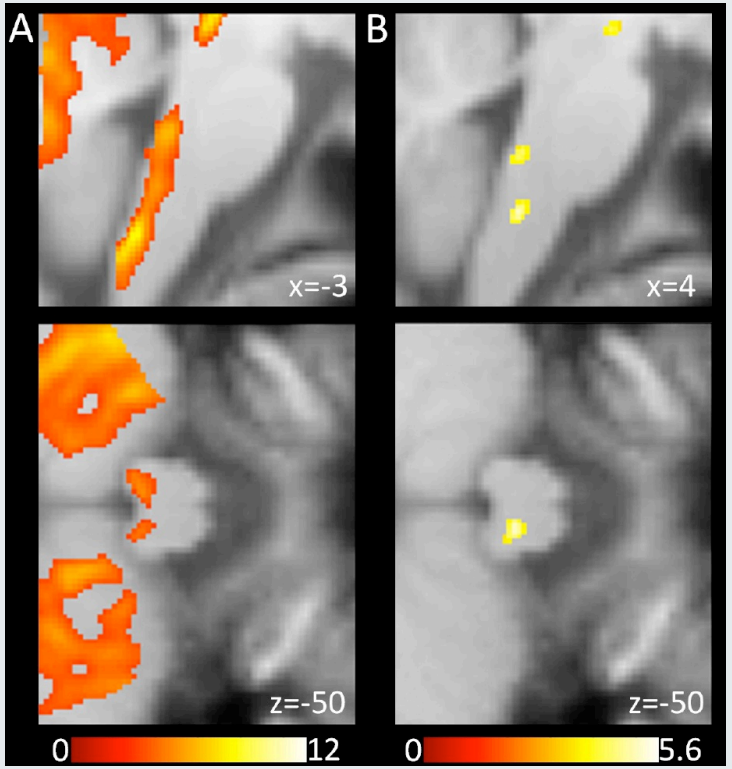
(e.g. 4 ml lidocaine 1% + 4 mg dexamethasone)

Migraine

Original research

Greater occipital nerve block modulates nociceptive signals within the trigeminocervical complex

Jan Hoffmann [1,2] Jan Mehnert [1] Elena M Koo,[1] Arne May [1]



Hoffmann *et al*. Journal of Neurology, Neurosurgery and Psychiatry 2021; 92: 1335-1340

Prevalence primary headaches & orofacial pain

Cluster headache 3%

Confirmed hemicrania continua 21%

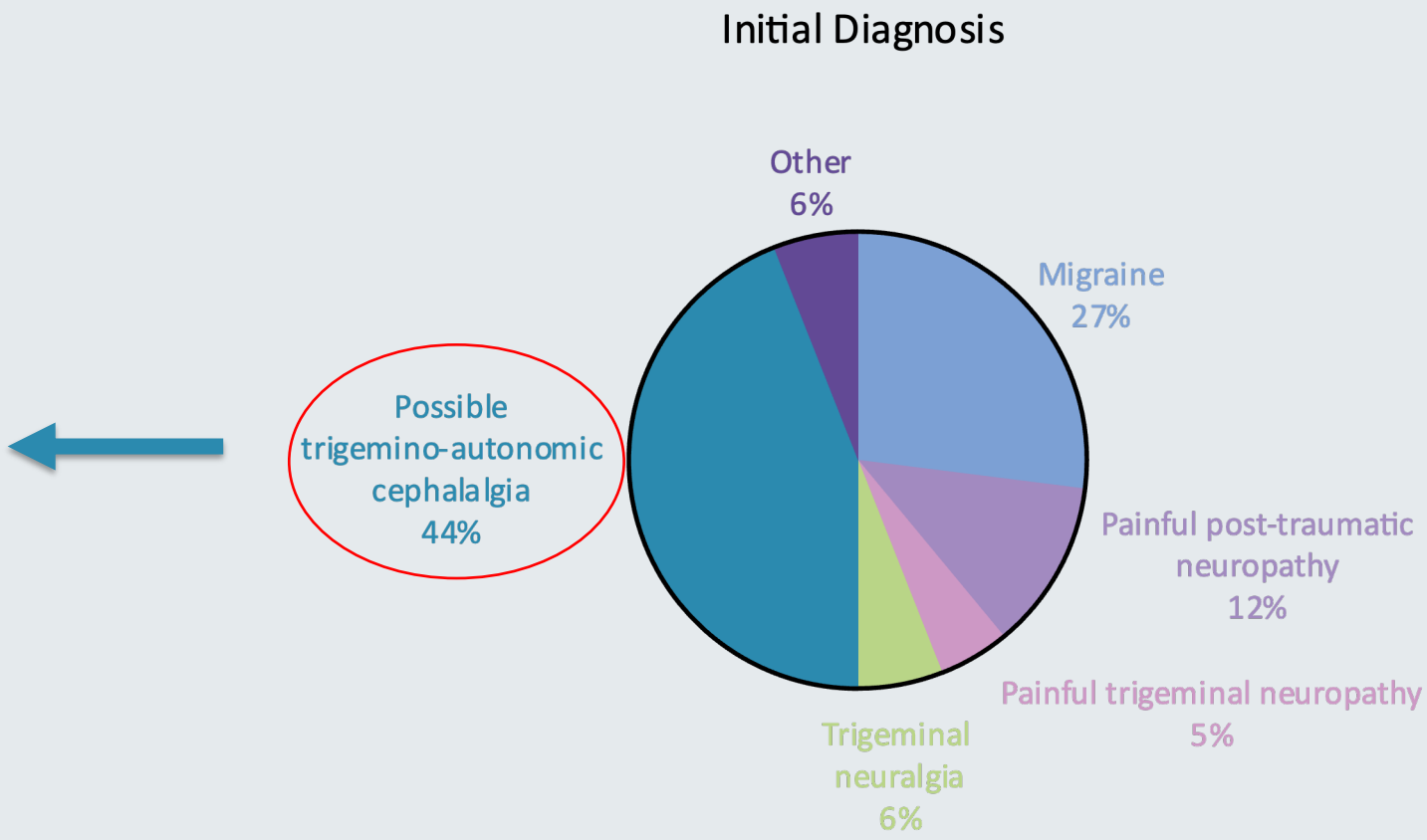
Confirmed paroxysmal hemicrania 2%

Possible hemicrania continua 34%

Possible paroxysmal hemicrania 3%

Chronic migraine 27%

SUNCT/SUNA 10%



Wei *et al*. Journal of Headache and Pain 2019; 20: 69

What to do in case of diagnostic uncertainty?

Detailed and accurate medical history?	Unilateral, attack duration, accompanying symptoms, medication overuse
Indication for secondary headache?	Sudden onset, neurological deficit, fever…
TAC possible?	Consider indomethacin test
Migraine possible?	Consider a triptan
Consider GON block	Effective in many headache/facial pain syndromes including trigeminal neuralgia

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