2020 FAMILY MEDICINE MIDWEST CONFERENCE

Playing Mind Games: A Malignancy Masquerading as a Migraine

Presented by

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THE FLEXIBILITY OF FAMILY MEDICINE IN A CHANGING WORLD

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DISCLOSURE

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No disclosures

Learning Objectives

1. Screen patients with new or changing headaches for red flag symptoms of secondary headache using SNNOOP10

2. Order imaging studies based on clinical suspicion of secondary headache

Introduction

- Primary headaches, like tension type, migraine, and cluster headaches make up over 50% of headache cases.
- Secondary headaches are a minority, about 18% of cases.
  - Only 1-5% of these are NOT due to medication overuse.
- Dearth of validated tools for headache diagnosis (ie POUND mnemonic for migraines).
- Important to rule out life threatening causes of headache.

Case

A 31-year-old female presents with new headache of 4 days duration, more severe over the past 2 days presents to Urgent Care.

- ROS: Photophobia, phonophobia, nausea, and imbalance at times. No vomiting, dizziness, lightheadedness, fever, chills, sweats, back pain, neck stiffness, unilateral weakness, numbness or tingling, ear pain, or congestion.
- Past medical history: Breast cancer, anxiety, palpitations, tension headaches, and subclinical hypothyroidism
- Surgeries: Left sided mastectomy, wisdom teeth extraction
- Family History: Migraines
- Medications: Tamoxifen, levothyroxine, oxybutynin, terbinafine, and acetaminophen

Urgent Care Discharged her with migraine diagnosis but encouraged close follow up with PCP.

Question #1

If present in a patient with a new headache, what symptom or sign would be least concerning?

A. Age >50 years old

B. Pregnancy

C. Post-traumatic

D. Isolated Fever

E. Neurologic deficits or dysfunction

Answer: D – Isolated fever is more accurately defined as an “orange flag” and concerning when combined with other systemic symptoms, ie neck stiffness, decreased consciousness. All other symptoms and signs are red flags.

Imaging

Choosing Wisely Initiative, American College or Radiology (ACR), and American Board of Internal Medicine (ABIM):

- For chronic headaches (>15 days per month) without change, seizures, or focal neurologic symptoms, routine use of neuroimaging is usually unwarranted

American Headache Society:

- Don't perform neuroimaging studies in patients with stable headaches that meet criteria for migraine

American College of Neurology

- SNNOOP10 Criteria is used to risk stratify new headaches for concerning symptoms for secondary headaches.

The cost of a CT scan or MRI ranges from $500-$2500

SNNOOP10 Criteria (American Academy of Neurology)

Did our patient meet criteria for imaging? YES

- Neoplasm History (T3 N0 Mx (ER+ weak/PR-/Her2-) left breast cancer status-post surgical and medical treatment 2 years ago)
- Abrupt onset of Headache
- Different from her stereotypic tension headache (Change in Pattern)
- Progressive headache not responsive to treatment
- Further history did reveal word finding difficulty, confusion, and memory lapses (Neurologic deficit)

	SNNOOP10 Criteria
	Systemic symptoms including fever
→	**N**eoplasm in history
→	**N**eurologic deficit or dysfunction
→	**O**nset of headache is sudden or abrupt
	Older age (after 65 years)
→	**P**attern change or recent onset of headache
	Positional headache
	Precipitated by sneezing, coughing, or exercise
	Papilledema
→	**P**rogressive headache and atypical presentations
	Pregnancy or puerperium
	Painful eye with autonomic features
	Posttraumatic onset of headache
	Pathology of the immune system such as HIV
	Painkiller overuse or new drug at onset of headache

Question #2

Based on what we know about our patient, what would be the most likely imaging modalities to pursue, taking into account ACR appropriateness?

A. CT head without contrast
B. MRI head without contrast
C. CT head with and without contrast
D. MRI head with and without contrast
E. CT head with and without contrast followed by MRI head with and without contrast.

Answer: D – Given relatively recent neoplasm history, the likelihood of malignant process contributing to this headache is high. MRI would likely be the most useful, but CT is almost always done first, especially when presenting to the ED.

Question #2 cont

American College of Radiology: Appropriateness Criteria Headache, 2014

Variant 10. New headache in cancer patient or immunocompromised individual

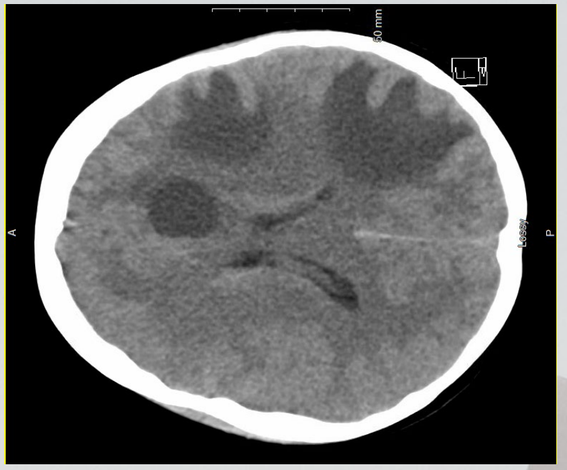
Radiologic Procedure	Rating	Comments
MRI head without and with contrast	9	See statement regarding contrast in text under “Anticipated Exceptions.”
MRI head without contrast	7	
CT head without and with contrast	6	
CT head with contrast	6	
MRA head without contrast	5	
MRA head without and with contrast	5	See statement regarding contrast in text under “Anticipated Exceptions.”
CT head without contrast	5	Perform this procedure if MRI is not available.
CTA head with contrast	5	
FDG-PET/CT head	4	This procedure is useful if an indeterminate mass is present.
Thallium-201 SPECT head	3	
Arteriography cervicocerebral	2	Perform this procedure if noninvasive imaging is unrewarding.
Tc-99m HMPAO SPECT head	2	This procedure is useful if an indeterminate mass is present.

Note: Rating scale: 1, 2, and 3 = usually not appropriate; 4, 5, and 6 = may be appropriate; 7, 8, and 9 = usually appropriate. CTA = CT angiography; FDG-PET = fluorine-18-2-fluoro-2-deoxy-D-glucose PET; MRA = MR angiography; SPECT, single-photon emission CT.

Back to the Case

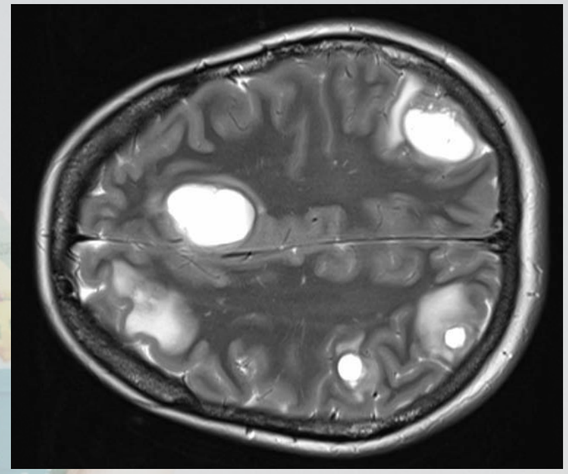
Even with the use of red flags, most imaging does not reveal any findings.

In our case:



Head CT in ED.

- Consistent with multiple metastatic lesions to the brain
- Frontal and parietal lobes, Left > Right
- Significant surrounding vasogenic edema and mass effect
- MRI with gadolinium recommended (below)



MRI Head in ED

- Axial T2 Post
- Consistent with numerous metastatic lesions
- Greater in the supratentorial region, Left > Right
- Mass effect greater on the left
- Mild midline structure shift from left to right
- Associated with surrounding edema

Discussion and Conclusion

- Yield of CT or MRI in patients with headache, normal neurologic exam, and even when red flag symptoms are present, is relatively low

- New headaches should be screened using the SNNOOPP10 criteria to detect secondary headaches.

- Ongoing need to assess predictive value or Red Flags since there is limited data on odds ratio, sensitivity, and specificity of each criterion in the SNNOOP10

    - Neoplasm history has odds ratio of ~7-12 with duration >8wks, emesis, gait instability, and Babinski sign

    - Neurologic Evaluation with “HINTS” exam has 100% sensitivity and 96% specificity for central secondary headache cause.

- Detailed and thorough H&P is essential

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Thank You!