ROS in your documentation do not contain conflicting information. Also make sure that you have revised your documentation to remove questions from your template that you did not ask, and to remove findings that you did not perform.

If you are going to use medical templates, consider creating different templates for different patient presentations. For example, you may consider creating different templates for infants, children, and adults. You may also consider creating different templates for simple complaints vs more complex complaints and for medical complaints vs traumatic complaints.

Algorithms Make Everyone Look Smarter

While clinicians provide medical care based on their experiences and clinical wisdom, in many cases, decision-making can be bolstered by using evidence-based support aids or clinical decision rules. For example, if a patient complains of chest pain, a low-risk Wells' score coupled with a negative pulmonary embolism rule-out criteria score may exclude a PE without additional testing. A HEART Score <3 in the same chest pain patient has a >99% negative predictive value for MACE within the following 30 days.[6]

Seeing a child with a head injury? Calculating the Pediatric Emergency Care Applied Research Network score can guide your decision whether to perform a head CT. Will a patient with syncope benefit from ED referral or hospital admission? Check the Canadian Syncope Risk Score, the OESIL score, or use the Rose rule.

While none of these scores reaches 100% accuracy, calculating the scores and documenting the results on a patient's medical record demonstrates awareness of evidence-based practices and provides objective evidence for your treatment decisions. These and other algorithms can be found at MDCalc.com. You can even download the algorithm results and copy them directly into a patient's medical record.

The Reexamination

Reexamination of patients is a simple way to demonstrate conscientiousness and vigilance. Consider a tragic case of a child who presents for evaluation of an asthma exacerbation, receives a nebulizer treatment, is discharged home, and who later suffers a cardiac arrest. Now imagine that the patient's medical record shows tachypnea and hypoxia with mild respiratory distress and retractions, but no follow-up exam after the nebulizer treatment was administered.

Even if the child were doing better prior to leaving the clinic, it would be easy to second-guess the provider's decision to discharge the patient based upon the bad outcome. On the other hand, it would be much more difficult to second-guess the provider's decision to discharge the patient if the chart reflects that the patient was given steroids and nebulizer treatments, was reevaluated an hour later, had normal vital signs, had normal oxygen saturation, exhibited no retractions, was breathing normally, was acting normally per the parent, the parent was comfortable taking the child home for continued outpatient treatment, appropriate outpatient medications were prescribed, and follow-up for evaluation the next day was recommended.

Similarly, reevaluating a patient and documenting a response to IV fluids, pain medications, or any procedures performed provides substantial evidence that a patient is getting better and not getting worse prior to being sent home. Conversely, if a reevaluation suggests that a patient is not improving, this gives the clinician cause to reassess a provisional diagnosis and disposition decision.

Summary

Medical documentation can improve patient care when used properly, but can be damaging to clinical care and detrimental to a provider's defense if used improperly. If using templates, use them wisely. Consider incorporating clinical decision rules into your assessments to provide objective evidence for higher risk patients. Noting appropriate pertinent positive and negative clinical findings will show that you considered alternative serious medical conditions during your physical exam. In patients with higher-risk presentations, documenting reexaminations and repeat vital signs helps support a determination whether a patient is improving and stable or deteriorating and unstable. Add these recommendations to your documentation and you'll be well on your way to a bulletproof medical record. ■

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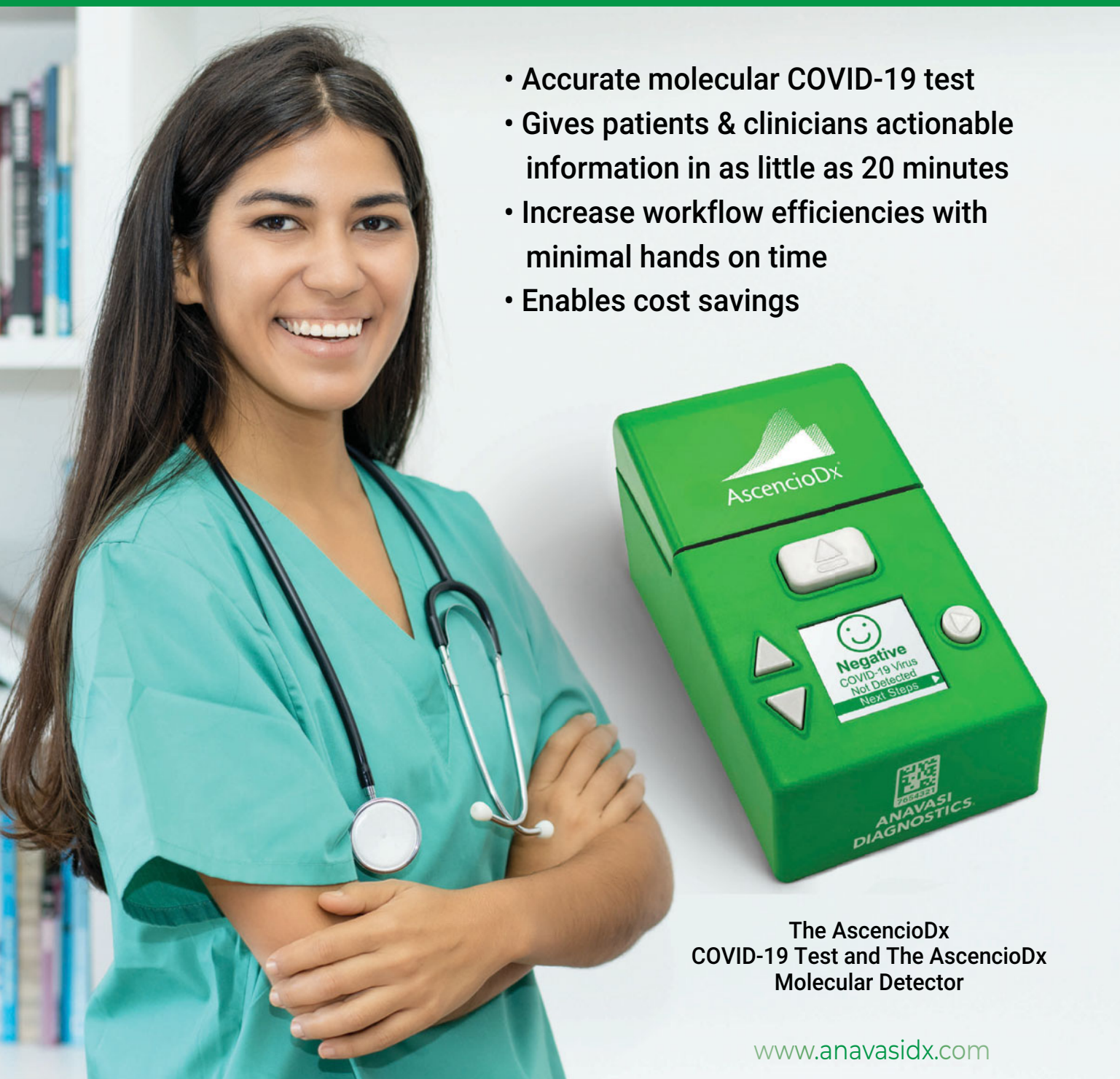

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More than a Simple Headache: Using the SNNOOP10 Criteria to Screen for Life-Threatening Headache Presentations

Urgent message: Headache is most often a benign complaint among patients presenting to urgent care. Vigilance for risk factors and appropriate use of validated screening criteria are essential to uncovering potentially life-threatening etiologies.

Paul Hansen, MD

Citation: Hansen P. More than a simple headache: using the SNNOOP10 criteria to screen for life-threatening headache presentations. *J Urgent Care Med*. 2023;17(9): 18-21.

Abstract

Introduction: Headache is most commonly a benign complaint among urgent care patients. Chronic subdural hematomas, however, are potentially life-threatening and can have a more insidious presentation. Applying the SNNOOP10 criteria can help identify patients at risk of life-threatening causes of secondary headache who may require referral to a higher level of care.

Clinical presentation: A 68-year-old female presented to an urgent care facility with a severe headache for the last month which had significantly worsened over the previous 3 days. The headache was constant and global. The patient reported no alleviating factors; aggravating factors included moving her head, flexing neck, and bending forward. Several elements of the SNNOOP10 criteria used to screen for secondary headache risk factors were positive.

Physical exam: A complete neurological exam was unremarkable, as was her general exam. Her vital signs were normal except for elevated blood pressure.

Case resolution: Due to the risk factors for serious secondary headache etiologies present in the SNNOOP10 criteria, the patient was referred to the emergency de-

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partment. She underwent CT scan of the head, which revealed an acute 12 mm thick left cerebral convexity subdural hematoma with 7 mm rightward midline shift.

Conclusion: The patient underwent placement of a left frontal subdural drain. The patient was doing well at 3-week outpatient follow-up. The SNNOOP10 mnemonic proved valuable as a screening tool and identified this patient's risk for a serious cause of headache.

Introduction

Headache is a common presenting complaint in urgent care settings. When a patient presents with a headache, it is important to consider potentially life-threatening causes, such as intracerebral hemorrhage, subarachnoid hemorrhage, and meningitis. The SNNOOP10 screening criteria is a useful guide for identifying warning signs and symptoms that may suggest an underlying serious pathology.

Case Presentation

A 68-year-old female presented to an urgent care facility with a severe headache that had been ongoing for over a month. She had initially been diagnosed with viral sinusitis on the 7th day of symptoms. Her headache severity significantly worsened over the previous 3 days. She now describes it as the worst headache of her life. The headache was constant and global in location without radiation, with associated symptoms of mild photophobia. The patient reported no alleviating factors. Aggravating factors included moving her head, flexing neck, and bending forward. The patient denied head trauma, dizziness, tremors, seizures, syncope, speech difficulty, vomiting, and weakness. Vitals were only notable for elevated blood pressure (177/97). A neuro exam was unremarkable, as was her general exam.

Differential Diagnoses

Tension headache, migraine, vasculitis, infectious intracerebral hemorrhage, intracranial mass or malformation, and medication overuse.

Management and Outcome

Although the patient appeared well and had an unremarkable exam, there was a clinical suspicion for a dangerous secondary headache etiology given that several elements of the SNNOOP10 screening criteria were positive. She was referred from the urgent care to the ED, where a CT scan of the head revealed a 12 mm thick left cerebral convexity subdural hematoma with 7 mm rightward midline shift.

The patient underwent placement of a left frontal subdural drain and was discharged home on 7 days of levetiracetam. The imaging postsubdural placement revealed almost complete resolution of the subdural hematoma. The patient was doing well at 3-week outpatient follow-up.

Discussion

Headaches are a common clinical problem; the prevalence of self-reported migraine or severe headache affects around 15% of U.S. adults quarterly.[1] Headaches are generally classified as either primary (which are not attributed to another underlying etiology such as migraine or tension headaches) or secondary (attributed to an underlying disorder). Although medication overuse, resulting from the use of simple over-the-counter analgesics, other analgesics (triptans, opiates), or combinations of medications (simple OTC analgesics and caffeine, benzodiazepines, etc.) 10-15 or more days per month for 3 months in the setting of a primary headache disorder is most common, the differential of secondary headaches includes life-threatening etiologies that may warrant urgent or emergent evaluation.[2] The prevalence of secondary headache varies widely by clinical setting. A trend of increasing secondary headache incidence in higher acuity or tertiary referral settings relative to a primary care clinic has been noted (near 20% vs near 2%, respectively).[3]

The SNNOOP-10 Mnemonic

The *original* SNOOP mnemonic (**s**ystemic symptoms/signs and disease, **n**eurologic symptoms or signs, **o**nset sudden or **o**nset after age 40 years, and change in headache **p**attern) was proposed in 2003 as a red flag screen for secondary headaches. Additional screening items have since been added based on expert opinion, creating the current SNNOOP10 criteria (**Table 1**). While not a formally derived or validated screening tool, it is widely recommended in medical reference material and international guidelines.[4,5]

Use of SNNOOP10 Criteria in the Urgent Care Setting

Patient disposition remains a decision to be made on a case-by-case basis via shared decision-making depending on the differential, your urgent care's diagnostic capabilities, and the patients' specific clinical context.

A patient with a history of headaches and no red flags is at a low risk of a serious or life-threatening etiology for their headache and will be unlikely to require transfer.

Alternatively, the combination of multiple red flags (as were present in this case) or abnormal exam findings

Table 1. The SNNOOP10 Criteria

Sign or Symptom	Related Secondary Headaches
Systemic symptoms including fever	Headache attributed to infection or nonvascular intracranial disorders, carcinoid or pheochromocytoma
Neoplasm in history	Neoplasms of the brain; metastasis
Neurologic deficit or dysfunction (including decreased consciousness)	Headaches attributed to vascular, nonvascular intracranial disorders; brain abscess and other infections
Onset of headache is sudden or abrupt	Subarachnoid hemorrhage and other headaches attributed to cranial or cervical vascular disorders
Older age (after 50 years)	Giant cell arteritis and other headache attributed to cranial or cervical vascular disorders; neoplasms and other nonvascular intracranial disorders
Pattern change or recent onset of headache	Neoplasms, headaches attributed to vascular, nonvascular intracranial disorders
Positional headache	Intracranial hypertension or hypotension
Precipitated by sneezing, coughing, or exercise	Posterior fossa malformations; Chiari malformation
Papilledema	Neoplasms and other nonvascular intracranial disorders; intracranial hypertension
Progressive headache and atypical presentations	Neoplasms and other nonvascular intracranial disorders
Pregnancy or puerperium	Headaches attributed to cranial or cervical vascular disorders; postdural puncture headache; hypertension-related disorders (eg, preeclampsia); cerebral sinus thrombosis; hypothyroidism; anemia; diabetes
Painful eye with autonomic features	Pathology in posterior fossa, pituitary region, or cavernous sinus; Tolosa-Hunt syndrome; ophthalmic causes
Post-traumatic onset of headache	Acute and chronic post-traumatic headache; subdural hematoma and other headache attributed to vascular disorders
Pathology of the immune system such as HIV	Opportunistic infections
Painkiller overuse or new drug at onset of headache	Medication overuse headache; drug incompatibility

Adapted from: Do TP, Remmers A, Schytz HW, et al. Red and orange flags for secondary headaches in clinical practice: SNNOOP10 list. *Neurology*. 2019;15;92(3): 134-144.

should increase clinical concern. If the patient appears unstable or has focal neurologic deficits, altered level of consciousness, or rapidly progressive signs or symptoms they should be transferred emergently to the ED.

Additionally, screening for secondary headache etiologies prior to management of pain is essential. NSAIDs may be contraindicated prior to definitive imaging depending on your clinical concern for intracranial hemorrhage, and a headache in the setting of pregnancy may warrant care coordination with the obstetrician.

Headache and Fever

The combination of headache and fever frequently occurs with infectious processes that do not involve the central nervous system. That said, the clinician should consider neurologic infections such as bacterial meningitis, encephalitis, or brain abscess, in addition to non-infectious etiologies such as vasculitis or inflammatory disorders. Headache with fever is particularly alarming and warrants escalation of care when co-occurring with either neck stiffness or other SNNOOP10 criteria, such

as neurologic deficit or altered level of consciousness.[3]

Headache and Age Over 50

Varying age cutoffs from ages 40 to 65 years have been suggested to raise clinical concern for secondary headache. Rather than considering a single age cutoff as increased risk, it may be prudent to consider age as a continuous variable above age 50, with increasing risk as age advances, while giving particular concern to patients aged 65 or older as they may be at a 10-fold increased risk of a serious underlying cause of headache.[3]

Post-Traumatic Headache

For post-traumatic headache, the clinical context can inform the level of concern and next steps in care. A post-traumatic headache that is chronic (>3 months) and without other positive SNNOOP-10 criteria (ie, progressive pattern, age, etc.), concerning historic features (such as antiplatelet or anticoagulant use), or findings on exam may be appropriate for further evaluation with a primary care provider or neurologist.[3]

Subdural Hematomas

A subdural hematoma (SDH) is a collection of blood that develops between the dura and arachnoid matter, with a significant risk for long-term morbidity or mortality. Head trauma is the most common etiology, although the trauma may be subclinical or the bleed may be spontaneous (as was the case in this patient).

Other risk factors include advancing age, with patients >70 being at particularly high risk, male gender, excessive alcohol consumption, antiplatelet or anticoagulant use, or structural brain abnormalities.[6-8] The incidence of SDH is expected to increase given our aging population and the increasing use of antiplatelet agents or anticoagulants.[7,8] Headache, altered mental state, or neurologic symptoms in the setting of recent head trauma or the risk factors mentioned should raise clinical suspicion.

Acute SDH may resorb, but progresses to chronic SDH (21 days duration) in roughly 20% of patients.[6,8] SDH appear crescent-shaped on head CT, and cross skull suture lines, which is a distinguishing feature from epidural hematomas. They typically appear hyperdense with acute bleeding on CT relative to the brain parenchyma for the first week, then generally progress from isodense in the second week to hypodense in the chronic phase.

Patients presenting from chronic SDH often do so after a latency period lasting from weeks to years where they may be asymptomatic as the hematoma slowly expands, eventually resulting in symptoms from increased intracranial pressure. Between 10% and 20% present with seizures, 2% to 15% with coma, and 2% with brain herniation.[7] Both acute and chronic SDH are complicated by a significant risk of recurrence.[7,8]

Surgical intervention is often required if the SDH is symptomatic, clot thickness is >10 mm, there is a midline shift of >5 mm, or if there are abnormal pupillary findings. Conversely, asymptomatic SDH <10 mm may be conservatively managed by neurosurgery with serial assessment and imaging.[6]

Conclusion

- Patients presenting with a headache should be carefully evaluated for potential life-threatening causes, particularly in cases where the headache is severe, sudden in onset, or associated with neurological deficits.
- The SNNOOP10 screening criteria is a useful guide for identifying warning signs and symptoms that may suggest an underlying serious pathology and warrant prompt referral to an ED setting.
- In this case, the patient's headache was initially assumed to be due to viral sinusitis, but several positive elements of the SNNOOP10 screening criteria on representation led to the diagnosis of a subdural hematoma.
- The SNNOOP10 criteria provides a useful mnemonic and could be included in a headache template to serve as a reminder to screen for concerning headache findings that could warrant escalation of care.

Ethics statement: The patient gave full consent for the use of her story in the publication of this case report. ■

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Manuscript submitted March 17, 2023; accepted April 3, 2023.