

# EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER  
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

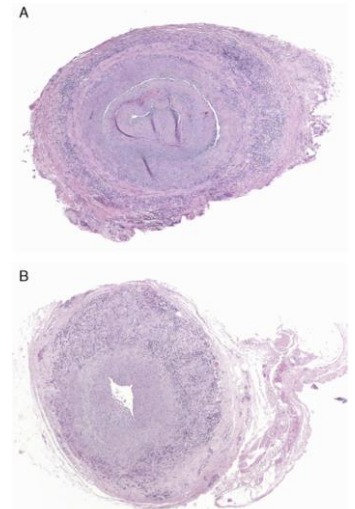
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## Facial Pain

A 55-year-old female with past medical history of hypertension, diabetes and asthma presents to the ED with left sided facial pain persisting for the past 7 days. She states that the pain is episodic, sharp and located over the left temporal region. She endorses dizziness, photophobia and visual disturbances during these episodes. She denies weakness, fever or rash. She has never experienced these symptoms before. The patient is afebrile and vitals are within normal limits. On physical exam, patient has tenderness to palpation over the left temporal region, cranial nerves are intact and the remainder of the physical exam is within normal limits. Which of the following is the most appropriate initial test for diagnosis of this patient's condition?

- A. Erythrocyte sedimentation rate (ESR)
- B. CT brain with contrast
- C. CT brain without contrast
- D. Temporal artery biopsy
- E. MRI brain with contrast



The American Journal of  
Surgical Pathology

**Temporal Arteritis is defined as a systemic vasculitis of unknown etiology.**

**(A) shows a classic transmural inflammation with 2 concentric bands of inflammation (B) shows a severely inflamed temporal artery with inflammation extending to the media**

*EM Case of the Week is a weekly "pop quiz" for ED staff.*

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

**BROWARD HEALTH MEDICAL CENTER**

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The correct answer is A. Erythrocyte sedimentation rate (ESR).

Temporal Arteritis, also known as Giant Cell Arteritis, is the most common systemic vasculitis. It of unknown etiology and most commonly affects patients greater than 50 years of age.

### Presentation

Temporal Arteritis should be considered in a patient 50 years or older presenting with one of the following signs or symptoms:

- New onset headaches
- Acute onset visual disturbances
- Jaw claudication
- Unexplained fever, anemia, or constitutional signs and symptoms
- Elevated ESR and/or CRP

Symptoms can be transient or fluctuating. Initial visual disturbances seen in Temporal Arteritis may be intermittent and consist of unilateral blurring, unilateral vision loss or diplopia. Prompt diagnosis is necessary to prevent irreversible vision loss. Temporal arteritis is also associated with polymyalgia rheumatica (PMR) and should be considered in all patients with current or prior history of PMR.

### Diagnosis

Traditionally the initial work up for Temporal Arteritis includes inspection of the temporal artery and an ESR and C-reactive protein (CRP). The temporal artery will often be tender to palpation and the ESR and CRP will often be elevated, however, these test are nonspecific. When Temporal Arteritis is suspected based on clinical presentation, a unilateral temporal artery biopsy of at least 1-2 cm in length should be performed. The characteristic findings on biopsy include a pan-arteritis with infiltration of CD4+ lymphocytes and macrophages.



**Prominent temporal artery in a patient with Temporal Arteritis**

(<https://www.sciencesource.com/>)

Giant cells are common but are not required for diagnosis. Treatment should be initiated prior to obtaining a temporal artery biopsy due to the potential for irreversible ocular complications. The use of glucocorticoids prior to biopsy will have little effect on biopsy results, as resolution of the inflammatory infiltrate occurs slowly and histopathologic evidence will be present for at least 1 month. Inflammation in Temporal Arteritis is not limited to the temporal artery. Inflammation tends to be widespread and can affect other branches of the external carotid artery. The use of color Doppler ultrasound as a noninvasive alternative to temporal artery biopsy has been considered. Ultrasound may reveal the "halo sign" which is a circumferential hypo-echoic area around the vascular lumen representing mural edema. Bilateral "halo signs" is highly specific for Temporal Arteritis. The "compression sign", which refers to persistence of the halo during compression of the lumen, is also highly specific for Temporal Arteritis. The diagnostic yield of color Doppler ultrasound is operator-dependent which leads to high variability in results. For this reason, temporal artery biopsy remains the gold standard of diagnosis.

For a list of educational lectures, grand rounds, workshops, and didactics please visit [BrowardER.com](http://BrowardER.com) and **click** on the **"Conference"** link.

*All are welcome to attend!*

## Treatment

The first line treatment for Temporal Arteritis is high-dose corticosteroid therapy. Due to the potential for permanent vision loss, corticosteroid therapy should be initiated prior to confirming the diagnosis via temporal artery biopsy. Patients who present with visual disturbances have increased chance of improvement of ocular symptoms if corticosteroids are started within the first 24 hours. Ocular damage may be irreversible if treatment is delayed for greater than 48 hours.

The suggested initial dose for patients with suspected Temporal Arteritis is oral prednisone 40-60 mg/day. This should be followed by a temporal artery biopsy within 1 week. For patients who present with visual or neurologic disturbances, the suggested initial dose is oral prednisone 100 mg/day. Alternatively, for patients presenting with acute visual disturbances, intravenous methylprednisolone at 1,000 mg daily for 3 days may be used. Systemic systems commonly improve within 72 hours of initiation of corticosteroid therapy. High-dose steroids should be continued until symptoms resolve and then may be tapered slowly. Therapeutic response can be monitored by both clinical signs and symptoms and serial measurements of ESR or CRP. There is no standard guideline for length of treatment.

The British guidelines for tapering schedule suggests:

- Continue prednisolone 40-60 mg for 4 weeks or until symptoms resolve and ESR/CRP return to baseline
- Then reduce prednisone dose by 10 mg every 2 weeks until a dose of 20mg daily is reached
- Then reduce prednisolone dose by 2.5 g every 2-4 weeks until a dose of 10 mg is reached
- Then reduce prednisolone dose by 1 mg every 1-2 months provided there is no relapse

## Take Home Points

- Temporal Arteritis is the most common systemic vasculitis and most commonly affects patients greater than 50 years of age.
- The gold standard of diagnosis for Temporal Arteritis is temporal artery biopsy, however colored Doppler ultrasound has been suggested as a noninvasive alternative for diagnosis.
- Treatment with corticosteroids should be initiated prior to temporal artery biopsy to prevent irreversible ocular damage.



### ABOUT THE AUTHOR

This month's case was written by Brittany Woolford. Brittany is a 4<sup>th</sup> year medical student from NSU-COM. She did her emergency medicine rotation at BHMC in September 2018. Brittany plans on pursuing a career in Anesthesiology.

### REFERENCES

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