

# Referrals and Trends Seen in Temporal Artery Biopsies at a Tertiary Care Center

Marie Somogyi MD, David Yoo MD, Yasmin Shayesteh MD

Loyola University Medical Center, Department of Ophthalmology, Maywood IL

## Abstract

### Purpose:

Giant cell arteritis (GCA) is diagnosed based on a combination of signs, symptoms and laboratory evidence<sup>1</sup>. Temporal artery biopsy is the gold standard in diagnosis of GCA and a referral for biopsy is commonly encountered in oculo-facial plastic and reconstructive surgery practices<sup>2</sup>. Our review investigates referral patterns from various medical specialties and the correlation to a positive biopsy or diagnosis of giant cell arteritis. Additionally, we analyzed outcome trends among various departments performing biopsies over an eight-year period. To our knowledge, this series of 143 patients is the largest to date evaluating outcomes based on referral source<sup>3</sup> and trends among surgical services<sup>4,5</sup>.

### Methods:

IRB approved retrospective chart review of 143 patients who underwent a temporal artery biopsy from January 2006 to April 2014 performed by vascular surgery, plastic surgery and oculoplastic surgery at our tertiary care institution.

### Results:

Of 143 patients referred for temporal artery biopsy at our institution, 15 had positive biopsies (10.5%) and 128 had negative biopsies. The departments performing the biopsies primarily include ophthalmology, plastic surgery, and vascular surgery. Ophthalmology performed 109 (76.2%) biopsies; however, there was a significant decline within the ophthalmology department over time. From 2006-2009, ophthalmology performed an average of 90.1% of the biopsies which decreased to 54.6% from 2010-2013. Similarly, overall biopsies performed decreased from 22 biopsies in 2006 to 11 in 2013. Among the 15 positive biopsies, 11 (73.3%) were performed by ophthalmology, 3 (20%) by vascular surgery, and 1 (6.6%) by plastic surgery. Ophthalmology and plastic surgery had similar positive biopsy rates of 10.1% and 10% respectively; whereas vascular surgery was higher with 14.3%. Internal medicine accounted for the majority of the referrals (51%) followed by ophthalmology (18.2%), rheumatology (13.3%), neurology (10.5%), and others (7.0%). Neurology referrals resulted in a 20% positive biopsy rate, followed by rheumatology (15.8%) and internal medicine (12.3%). Ophthalmology referrals did not result in any positive biopsies. Of the 15 positive biopsies, 60% were referred from internal medicine, 20% from rheumatology and 20% from neurology.

### Conclusions:

Over time, we have witnessed a decrease in temporal artery biopsies at our institution, as well as a decline in the proportion of biopsies performed by the ophthalmology department. Internal medicine provides the largest referral base for temporal artery biopsies. However, neurology had the highest proportion of positive biopsies per referral, suggesting they may have a better pretest probability for the disease. Interestingly, none of the referrals from within the ophthalmology department resulted in a positive biopsy.

## Introduction

Giant cell arteritis (GCA) is a vasculitis of medium and large-sized arteries, characterized by granulomatous involvement of the aorta and its major branches, one of those being the temporal artery. The most common presenting symptoms of GCA is headache, especially in the temporal area, whereas the most specific symptom is jaw claudication. The diagnosis should always be considered in patients over 50 years of age that present with a new onset of headache, visual dysfunction, polymyalgia rheumatica, or systemic inflammatory symptoms.

Vision loss is the most feared complication of GCA due to the involvement of the ocular vessels. Sudden, painless and profound vision loss (unilateral or bilateral) can be the predominant presenting ophthalmologic symptom. Since GCA can result in irreversible blindness, there is an overwhelming consensus that corticosteroids be started immediately upon suspicion of the diagnosis of GCA.

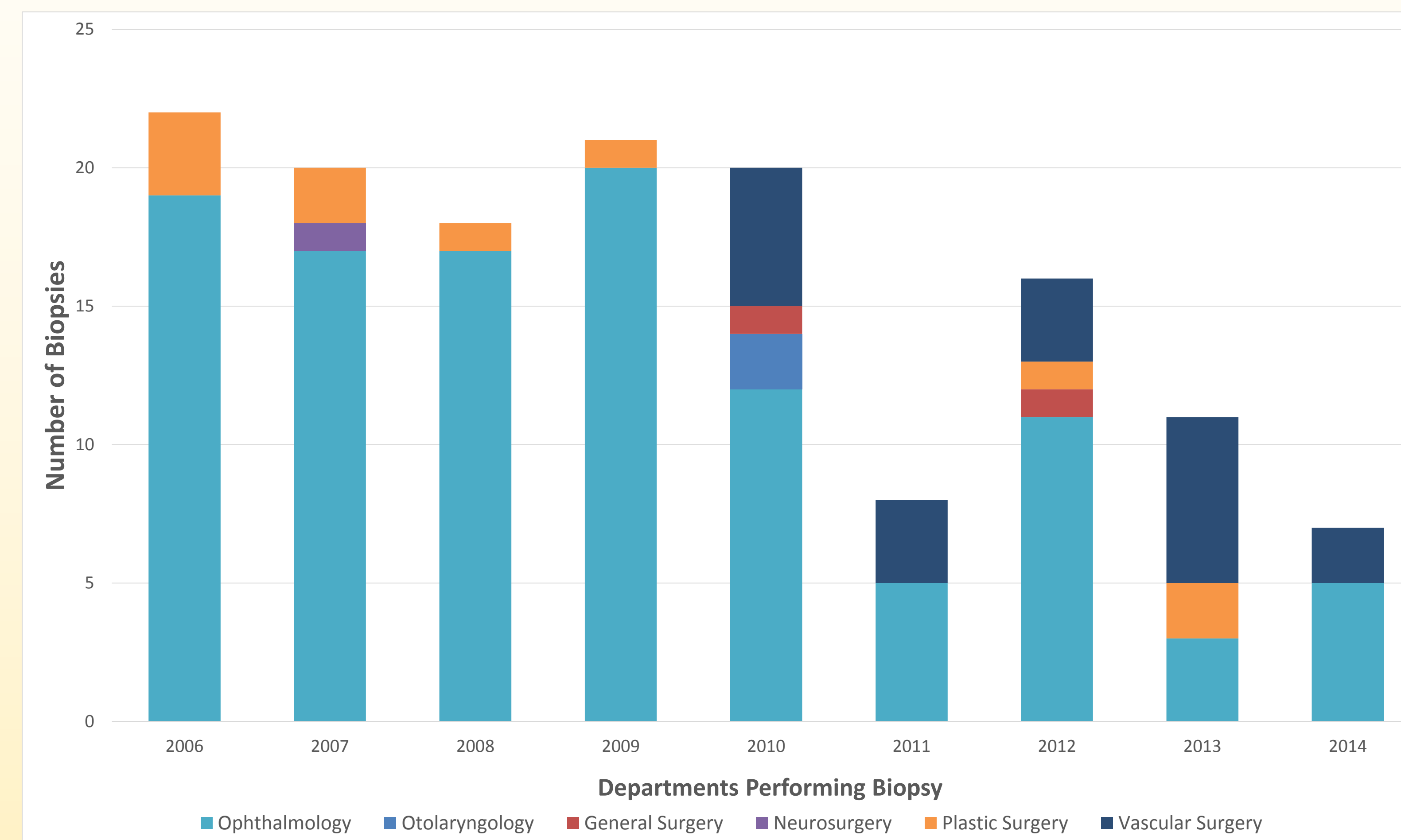
The diagnosis of GCA is made based on a combination of signs, symptoms and laboratory evidence. Temporal artery biopsy is the gold standard for the diagnosis of GCA and referrals for biopsy are commonly encountered in oculoplastic surgery practices, as well as other departments, including vascular surgery and plastic surgery. Understanding the source of referrals for biopsy and the surgeons performing temporal artery biopsies at an institution aides in the judicious management of patients suspicious for GCA.

## Methods

- IRB approved, retrospective chart review
- **Inclusion criteria:** Patient undergoing temporal artery biopsy with suspicion for giant cell arteritis
- **Date range:** January 2006 to April 2014
- **Total number of patients:** 143
- **Departments performing biopsies:** Oculoplastic surgery, Plastic surgery, Vascular surgery

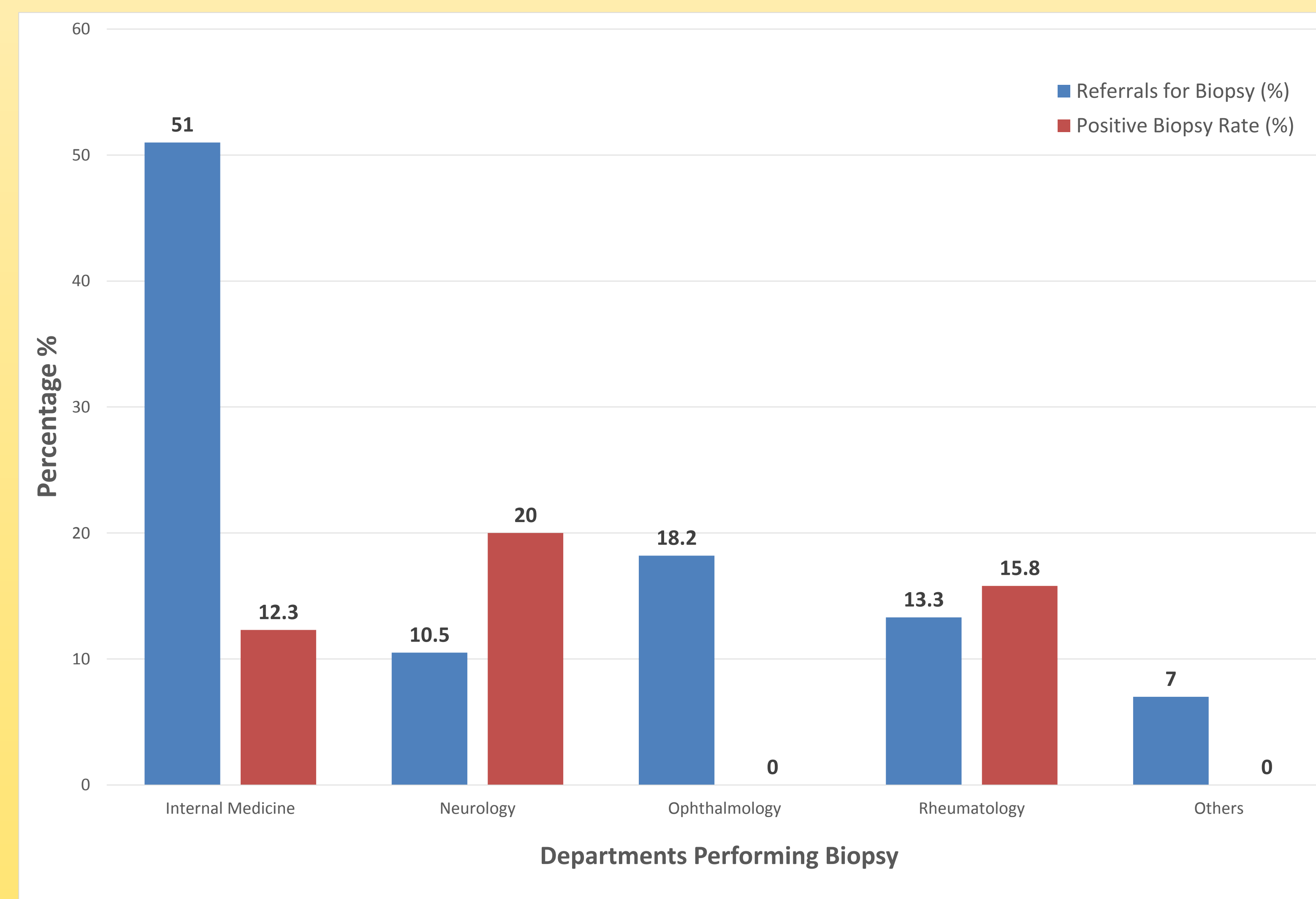
## Results

### Temporal Artery Biopsies Performed by Year and Department



**Table 1. Temporal Artery Biopsies Performed by Year and Department.**  
There has been a decline in the total number of biopsies being performed at our tertiary care center. Additionally, the number of biopsies performed by the ophthalmology department has also declined over time as the biopsies performed by vascular surgery has increased.

### Referral Trends for Temporal Artery Biopsy



**Table 2. Referral Trends for Temporal Artery Biopsy**  
The Internal Medicine Department accounts for the largest percentage of referrals for temporal artery biopsies (51%). However, referrals from the Neurology Department yield the highest positive biopsy rate per referral (20%).

## Conclusions

- 15 out of 143 patients had a positive biopsy (10.5%)
- Overall, Ophthalmology performed 109/143 (76.2%) biopsies
- Over time, the percentage of the biopsies done by Ophthalmology has declined from 90.1% (2006-2009) to 54.6% from 2010-2013.
- Internal Medicine accounted for the majority of the referrals for biopsy (51%), but referrals from the Neurology department resulted in the highest positive biopsy rate (20%)
- Referrals from within the Ophthalmology department did not result in any positive biopsies.

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