

Carotid Web Stenting in an African American Female: Case Report and Review of Literature

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Introduction

Carotid webs are shelf-like protrusions that form as a result of a developmental abnormality. Studies suggest a prevalence of up to 37% of cryptogenic stroke patients. Existing literature proposes a developmental etiology for its formation as opposed to fibromuscular dysplasia (FMD), which is believed to develop due to mural ischemia. Thought to be a variant of FMD, its histopathology shows intimal thickening and hyperplasia of the fibromuscular layer. In contrast to the carotid web, FMD has been classically described as a "string of beads" for its kinked appearance on angiography and treated with antiplatelet therapy with an option for gradual dilation. Diagnosis is based on stroke symptomatology in the absence of traditional risk factors, and identification on CTA axial cut. Currently, the vast majority of cases undergo surgical resection. Our case report describes the diagnosis and stenting of a carotid web with favorable outcomes in an African American female.

Methods

A 33-year-old African American female presented to the ED complaining of left hemiparesis and left facial droop. The patient did not have a significant past medical history including those predisposing for stroke. Initial physical examination showed left facial asymmetry, left upper extremity pronator drift,

and left lower extremity weakness with a calculated NIHSS of 3. CTA showed an occlusion of M2 of the right MCA, and a carotid web at the carotid bulb visualized on axial and coronal cuts. Aspiration thrombectomy resulted in TICI 3 score, and double antiplatelet therapy was prescribed. Stenting of the carotid web was performed three weeks later. The patient returned for a two-week follow -up with complete resolution of her neurological symptoms.

Discussion

This is the third reported case of carotid web stenting. Although rare, carotid webs have been shown to pose a significant risk of recurrent strokes in the absence of the typically recognized risk factors such as hypertension, diabetes, and heart disease as a number of previous studies indicate. Although existing literature shows that the overwhelming majority of carotid web patients are treated with endarterectomy, we found that our patient tolerated stent placement and subsequent anticoagulant therapy very well. As the current gold standard for detection of carotid webs, we employed CTA imaging as a diagnostic tool. Given that surgical resection has been widely described in literature as the preferred method of treatment for carotid webs, little has been reported on stenting techniques for this pathology.

Conclusions

Carotid webs are increasingly suspected in cryptogenic strokes.

We report the third existing case of carotid web successfully treated with stenting, and the first in an African American female patient.

Learning Objectives

By the conclusion of this session, participants should be able to discuss the typical presentation, diagnosis, natural history and accepted treatment for carotid webs in the setting of stroke. We discuss a relatively common presentation of carotid web discovered during diagnostic imaging in a young African American female following stroke. However, the treatment of this patient with endovascular stenting as opposed to open surgery makes her management unique, with only 3 additional cases of stenting being documented in the literature.

References

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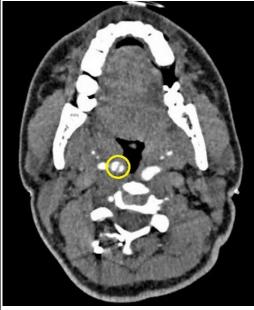
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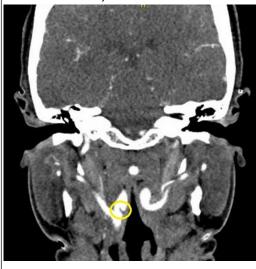
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CTA, axial view



Right IC web (yellow circle).

CTA, coronal view



Carotid web of right IC bullb.