Carotid-Cavernous Sinus Fistula
Joseph Junewick, MD FACR

10/03/2010

History
12 year old female with proptosis and chemosis 1 month after resection of pituitary macroadenoma.

Diagnosis
Carotid-Cavernous Sinus Fistula

Discussion
A carotid cavernous fistula is an abnormal connection between the internal or external carotid artery and the cavernous sinus. These may result from direct trauma, surgery, dural sinus thrombosis, or atherosclerosis or may occur spontaneously; spontaneous fistulas have been seen in people with Ehlers-Danlos syndrome, osteogenesis imperfecta, and pseudoxanthoma elasticum. Symptoms include proptosis, conjunctival chemosis, decreased visual acuity, and ausculatory bruit. The imaging findings on CT or MRI angiography can include dilated superior ophthalmic vein, retrobulbar fat stranding, proptosis, cavernous sinus dilation, and congestive extraocular muscle enlargement. Convential angiography demonstrates rapid early filling of the cavernous sinus with retrograde filling of the ipsilateral superior ophthalmic vein. Catheter directed angiography with embolization is the mainstay of treatment. This can be achieved either tranarterial or transvenously with detachable balloons or coils.

Findings
CT-Right proptosis, dilated superior ophthalmic vein and enlargement of the ocular muscles.
IR-Right internal carotid injection demonstrates opacification of an enlarged right cavernous sinus and superior ophthalmic vein on arterial phase imaging.

Reference

Contributor
Jennifer Rollenhagen MD
Disclaimer
This teaching site is partially funded by an educational grant from GE Healthcare and Advanced Radiology Services, PC. The material on this site is independently controlled by Advanced Radiology Services, PC, and GE Healthcare and Spectrum Health have no influence over the content of this site.

Content Download Agreement
The cases and images on this website are owned by Spectrum Health. Permission is granted (for nonprofit educational purposes) to download and print materials to distribute for the purpose of facilitating the education of health professionals. The authors retain all rights to the material and users are requested to acknowledge the source of the material.

Site Disclaimer
This site is developed to reach healthcare professionals and medical students. Nothing this site should be considered medical advice. Only your own doctor can help you make decisions about your medical care. If you have a specific medical question or are seeking medical care, please contact your physician.

The information in this website is provided for general medical education purposes only and is not meant to substitute for the independent medical judgment of a physician relative to diagnostic and treatment options of a specific medical condition.

The viewpoints expressed in these cases are those of the authors. They do not represent an endorsement. In no event will Advanced Radiology Associates, PC, Spectrum Health Hospitals (Helen Devos Children's Hospital) or GE Healthcare be liable for any decision made or action taken in reliance upon the information provided through this website.