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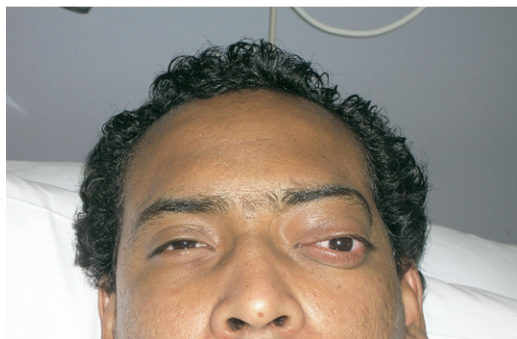


Figure 1. Proptosis observed in left eye.



Figure 2. Proptosis, left eye.



Figure 3. CT noncontrast enhancement coronal image revealing significant proptosis of the left eye, with lateral and inferior displacement.



Figure 4. CT contrast-enhanced image of the orbits revealing thinning of the superior roof, with erosion into the medial orbital wall. Used with permission of Katrina S. Good, DO, Maine Medical Center, Portland, ME.

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A 24-year-old man presented from a correctional facility with proptosis of the left eye (Figures 1 and 2). The proptosis was slowly progressive during 8 months, but it went unrecognized until transfer to a new correctional facility. The patient was sent to our emergency department for evaluation. Patient symptoms included diplopia and blurred vision, and headache which had increasingly worsened during the past few weeks. Medical history was pertinent for chronic sinusitis with drainage of the left frontal sinus 5 years ago and facial trauma, date unknown.^{1,2,3}

For the diagnosis and teaching points, see page 343.

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4. Weber T, Hogler S, Auer J, et al. D-dimer in acute aortic dissection. *Chest*. 2003;123:1375-1378.
5. Perez A, Abbet P, Drescher MJ. D-dimers in the emergency department evaluation of aortic dissection. *Acad Emerg Med*. 2004;11:397-400.
6. Eggebrecht H, Naber CK, Bruch C, et al. Value of plasma fibrin D-dimers for detection of acute aortic dissection. *J Am Coll Cardiol*. 2004;44:804-809.
7. Akutsu K, Sato N, Yamamoto T, et al. A rapid bedside D-dimer assay (cardiac D-dimer) for screening of clinically suspected acute aortic dissection. *Circ J*. 2005;69:397-403.
8. Sodeck G, Domanovits H, Schillinger M. D-dimer in ruling out acute aortic dissection: a systematic review and prospective cohort study. *Eur Heart J*. 2007 [Epub ahead of print]. doi:10.1093/eurheartj/ehm484.
9. Hazui H, Fukumoto H, Negoro N, et al. Simple and useful tests for discriminating between acute aortic dissection of the ascending aorta and acute myocardial infarction in the emergency setting. *Circ J*. 2005;69:677-682.
10. Hazui H, Nishimoto M, Hoshiga M, et al. Young adult patients with short dissection length and thrombosed false lumen without ulcer-like projections are liable to have false-negative results of D-dimer testing for acute aortic dissection based on a study of 113 cases. *Circ J*. 2006;70:1598-1601.
11. Wiegand J, Koller M, Bingisser R. Does a negative D-dimer test rule out aortic dissection? *Swiss Med Wkly*. 2007;137:462.
12. Sbarouni E, Georgiadou P, Marathias A, et al. D-dimer and BNP levels in acute aortic dissection. *Int J Cardiol*. 2007;122:170-172.
13. Klompas M. Does this patient have an acute thoracic aortic dissection? *JAMA*. 2002;287:2262-2272.

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DIAGNOSIS:

Frontoethmoid mucocele. Computed tomography (CT) revealed a large frontoethmoid mucocele, with significant proptosis of the left globe and inferior and lateral displacement of the eye (Figure 3). Thinning of the superior orbital roof, with erosion of the medial orbital wall, can be seen in Figure 4. The patient underwent a Lynch frontal sinusotomy, removal of the mucocele, decompression of the orbit, and left endoscopic ethmoidectomy. His visual changes resolved 2 days after the surgery, and the postsurgical CT 2 months later revealed decompression of the mass, with some displacement inferiorly of the globe. The patient had an uncomplicated postoperative course.

Mucoceles are slow-growing cystic lesions lined with respiratory epithelium containing mucous and serous fluid. Sinus mucoceles form when there is obstruction of the sinus ostium from congenital malformation, chronic sinus disease, infection, nasal surgery, allergies, facial trauma, or neoplasm. Pressure is then exerted by the nondraining mucocele, expanding the sinus and causing extension of the mass into important adjacent structures such as the orbit and cranial cavity. The most common location is frontoethmoid. Clinical variation can differ by location of the mass, such as frontal mucoceles which cause the eye to be pushed inferior, ethmoid mucoceles cause proptosis, and maxillary mucoceles can cause retropulsion. Infection of mucoceles is rare. Treatment is surgical, with endoscopic drainage being most favorable, although there are several surgical techniques.

REFERENCES

1. Arrue P, Kany MT, Serrano E, et al. Mucoceles of the paranasal sinuses: uncommon location. *J Laryngol Otol*. 1998;112:840-844.
2. Wang T, Liao S, Jou J, et al. Clinical manifestations and management of orbital mucoceles: the role of ophthalmologists. *Jpn J Ophthalmol*. 2005;49:239-245.
3. Yak SK, Aung T. Frontosinus sinus mucoceles causing proptosis: two case reports. *Ann Acad Med Singapore*. 1998;27:744.