Coil extrusion after endovascular treatment

Case illustration

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This 49-year-old man had life-threatening epistaxis during endoscopic sinus surgery. An internal carotid artery (ICA) pseudoaneurysm extending into the sphenoid sinus was treated with coil embolization at another center (Fig. 1A and B). Two years later, the patient noticed platinum coil material in his left nostril. The coil mass was found to have unraveled, with extension of coil material into the nasopharynx (Fig. 1C). After successful test occlusion, the vessel was sacrificed and the sphenoid sinus coil mass was removed (Fig. 1D).

The proximity of the carotid artery to the wall of the sphenoid sinus makes the vessel vulnerable to injury during procedures involving the sphenoid sinus.2 In this case, the pseudoaneurysm probably arose from injury to the adventitial layer of the artery and prior sinus infections and may have also weakened the vessel wall.4 The absence of a firm mechanical barrier around the pseudoaneurysm probably contributed to unraveling of the coil mass over time.

This case illustrates a potential hazard of coil embolization of pseudoaneurysms that extend into a space without a surrounding mechanical barrier. Platinum coils exert a continuous outward radial force against the wall of the aneurysm. In the treatment of pseudoaneurysms in which there is potential for coil expansion into a paranasal sinus or other “open space,” primary coil embolization of the lesion should not be a first option.1,3 Therapeutic sacrifice of the parent vessel, surgical repair of the pseudoaneurysm if possible, or even embolization with a nonexpansible agent, such as Onyx, may be better strategies.

References


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