The Anterior Cerebral Artery: A Silent Killer in FESS

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Introduction:

• The anterior cerebral artery is an important vascular territory that supplies the anterior part of the brain.
• Trauma to this artery can occur during endoscopic sinus surgery (ESS).
• The potential for trauma to the anterior cerebral artery during ESS is a significant concern.

Background:

• A review of the literature reveals a lack of consensus on the management of injuries to the anterior cerebral artery during ESS.

Goal:

• To propose a management algorithm for ENT surgeons who may be faced with anterior cerebral artery complications following ESS.

Material and methods:

• Three cases are reported, each involving a straightforward management approach to anterior cerebral artery trauma.

Case 1:

• A 56-year-old male presented with a history of chronic sinusitis with intracranial vascular problems.
• The surgery included unilateral anterior and posterior ethmoidectomy and bilateral sphenoidotomy.
• During surgery, penetration of the anterior skull base occurred on the right side at the fovea ethmoidalis.
• Immediate post-operative computed tomography (CT) revealed a left frontal hematoma with no mass effect and a lumbar puncture was positive for streptococcus.
• The patient was diagnosed with laceration of the anterior cerebral artery.
• Even with expedient surgical intervention, the patient died two days following surgery.

Case 2:

• A 54-year-old male presented with a history of chronic sinusitis with intracranial vascular problems.
• The surgery included unilateral anterior and posterior ethmoidectomy and bilateral sphenoidotomy.
• During surgery, penetration of the anterior skull base occurred on the right side at the fovea ethmoidalis.
• Immediate post-operative CT revealed a left frontal hematoma with no mass effect and a lumbar puncture was positive for streptococcus.
• The patient was diagnosed with laceration of the anterior cerebral artery.
• The patient was discharged home after 5 days.

Case 3:

• A 58-year-old male presented with a history of chronic sinusitis with intracranial vascular problems.
• The surgery included unilateral anterior and posterior ethmoidectomy and bilateral sphenoidotomy.
• During surgery, penetration of the anterior skull base occurred on the right side at the fovea ethmoidalis.
• Immediate post-operative CT revealed a left frontal hematoma with no mass effect and a lumbar puncture was positive for streptococcus.
• The patient was diagnosed with laceration of the anterior cerebral artery.
• The patient was discharged home after 5 days.

Discussion:

• There is a need for a broad spectrum of intracranial vascular complications following ESS.
• Specific cases should be observed and documented to improve the management of these complications.

References: