

Orbital Abscess Following Sphenopalatine and Anterior Ethmoidal Artery Ligation for Recurrent Epistaxis

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Received: June 30, 2015

Revised: July 21, 2015

Accepted: July 25, 2015

Published online: September 6, 2015

ABSTRACT

Orbital abscess is a rare but potentially blinding condition which has not previously been reported following endoscopic sinus surgery. We report an abscess which occurred after sinus surgery combined with anterior ethmoidal artery ligation, necessitating surgical intervention. We suggest that remedial measures may be advisable if a breach into the orbit is noted intra-operatively.

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Key words: Orbit; Abscess; Postoperative complications; Endoscopic sinus surgery

Glasman P, Salvi S. Orbital Abscess Following Sphenopalatine and Anterior Ethmoidal Artery Ligation for Recurrent Epistaxis. *International Journal of Ophthalmic Research* 2015; 1(2): 69-70
Available from: URL: <http://www.ghrnet.org/index.php/ijor/article/view/1271>

INTRODUCTION

We present a case of orbital abscess formation after endoscopic sinus surgery for intractable epistaxis. Conservative treatment with

intravenous antibiotics was unsuccessful and the patient required external drainage. Signs of optic neuropathy rapidly improved and the patient made an uneventful recovery. This case highlights the dangers of instrument contamination between the nasal space and orbit.

CASE PRESENTATION

A 71 year old man presented to the otorhinolaryngology department with recurrent episodes of right nostril epistaxis over the previous 4 years; these were increasing in severity and frequency and requiring admission on a regular basis for nasal packing. He was treated by his general practitioner for hypertension, which was well controlled on ramipril, doxazosin and furosemide. He had no other past medical history and was not on any antiplatelet agent nor anticoagulant. He was electively admitted for right sphenopalatine artery and anterior ethmoidal artery ligation.

His operation proceeded routinely under general anaesthesia. The sinuses were explored endoscopically; mucopus was noted arising from the right maxillary antrum so antrostomy was performed, 3 branches of the sphenopalatine artery were identified and cauterised subperiosteally, and the anterior ethmoid artery was identified and clipped through a Lynch-Howarth incision. The same instruments were used for both endoscopic and "open" procedures. During anterior ethmoidal artery ligation, the surgeon noted that he has a small breach into the anterior ethmoidal sinus. Intra-operative or post-operative antibiotic cover was not given. He was well the following morning and allowed home for outpatient follow up.

He was re-admitted 12 hours later pyrexial with increasing pain, swelling and discharge from around the right eye (Figure 1)

A provisional diagnosis of postoperative infection was made, he was commenced on intravenous antibiotics and CT imaging arranged (Figure 2).

This demonstrated a breach of the medial wall of the orbit into the right anterior ethmoidal sinus, subperiosteal collection and preseptal tissue swelling. Despite medical treatment, his symptoms increased over the following 24 hours and he developed signs of early optic



Figure 1 Periorbital soft tissue swelling and erythema.

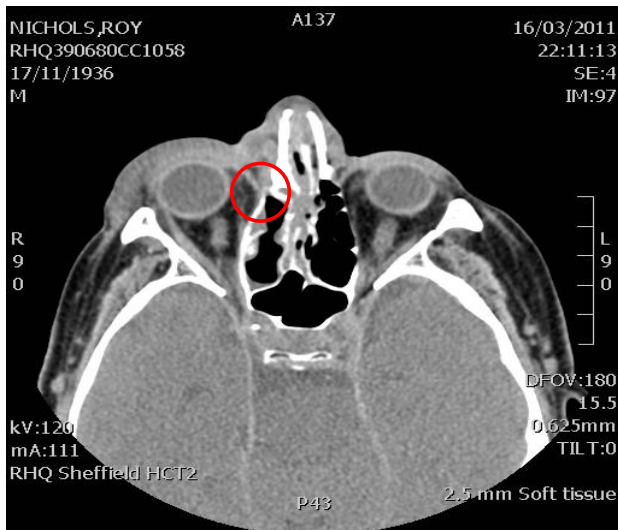


Figure 2 CT imaging showing orbital abscess and medial wall breach (red circle).

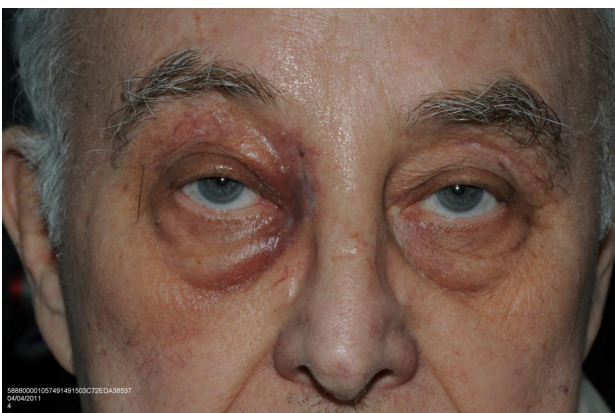


Figure 3 Post operative appearance at 6 weeks.

neuropathy in the form of reduced colour vision of the right eye.

He was therefore taken urgently back to theatre. The previous incision was opened, pus was found beneath the periosteum, and an anterior ethmoid break was noted. The sub-periosteal pus was drained, a small amount of necrotic tissue debrided and the ethmoids cleared. A corrugated drain was sited and the remaining wound closed.

The patient did well postoperatively, with resolution of pain and swelling.

The drain was removed after 6 days. Microbiology confirmed staphylococcus aureus and group A streptococcus from local swabs and peripheral blood cultures and he was treated with a six week course of antibiotics.

At outpatient follow up six weeks later, there was complete resolution and no recurrence of symptoms.

DISCUSSION

Sphenopalatine artery ligation and anterior ethmoidal artery ligation is a recognised treatment for recurrent epistaxis. Whilst complications including scarring, facial oedema, damage to the medial canthal ligament (which may affect drainage in lacrimal ducts and result in epiphora), orbital haemorrhage and superior oblique palsy have been reported before^[1,2,3] to the authors knowledge this is the first report of an orbital abscess formation following the procedure.

We believe the orbital abscess was secondary to instrument contamination as the same instruments were used to perform sphenopalatine artery ligation nasally and the anterior ethmoidal artery ligation orbitally in the presence of mucopus discharge from the maxillary antrum. Intra-operative antibiotic cover was not given as per surgeon preference. The breach into the anterior ethmoid could have been contributory but there was no demonstrable infection of the anterior ethmoidal sinus during surgery.

Timely surgical intervention prevented visual loss.

It may be advisable that separate instrumentation should be used when operating between nose and orbit in the presence of nasal infection and antibiotic cover used to prevent orbital abscess formation.

CONFLICT OF INTERESTS

The authors have no conflicts of interest to declare.

REFERENCES

- 1 Couch JM, Somers ME, Gonzalez C. Superior oblique palsy after anterior ethmoidal artery ligation. *Arch Ophthalmol.* 1990;108(8):1110-1113.
- 2 Yeh, S, Yen M. Orbital Apex Syndrome After Ethmoidal Artery Ligation for Recurrent Epistaxis. *Ophthalmic Plastic & Reconstructive Surgery.* 2004 Volume 20 392-394
- 3 Filho BCA, Pinheiro-Neto DC et al. Endoscopic ligation of the anterior ethmoidal artery: a cadaver dissection study. *Braz J Otorhinolaryngol.* 2011;77(1):33-8.

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