

# Bilateral blindness following anterior nasal packing in a case of nasopharyngeal angiofibroma

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## Abstract

**Background:** Epistaxis is the most common ENT emergency encountered in the Emergency Department. Most cases can be managed by simple anterior nasal packing. This is usually a safe and very effective option in an emergency situation, requiring minimal expertise and infrastructure. This paper describes a rare instance of a serious complication following anterior nasal packing in a case of nasopharyngeal angiofibroma.

**Case report:** A 27-year-old man diagnosed with nasopharyngeal angiofibroma presented to the Emergency Department with bilateral epistaxis. The patient was stabilised and anterior nasal packing was performed, which controlled the bleeding. Three hours later, the patient developed complete blindness in both eyes. Aggressive medical management was initiated immediately, but failed to restore the patient's vision.

**Conclusion:** Anterior nasal packing is a simple and minimally invasive procedure practised regularly in an Emergency Department setting. However, it can occasionally lead to serious complications such as blindness. Thus, obtaining informed consent is essential to avoid medico-legal consequences in high-risk cases.

**Key words:** Angiofibroma; Blindness; Epistaxis

## Introduction

Epistaxis is one of the most common ENT emergencies encountered in routine clinical practice. Approximately 60 per cent of the adult population experiences an epistaxis episode at least once during their lifetime. Of these, only 5–6 per cent requires hospitalisation.<sup>1</sup> Both non-surgical and surgical modalities have been described for managing epistaxis. Non-surgical techniques are effective in controlling the bleeding in 80–90 per cent of cases.<sup>2</sup> Common methods involve packing the nasal cavity with an Epistat catheter, a Merocel nasal tampon or ribbon gauze. A literature search did not identify any reports of significant complications associated with anterior nasal packing.

This case report describes a rare and serious complication following anterior nasal packing in a 27-year-old patient diagnosed with nasopharyngeal angiofibroma.

## Case report

A 27-year-old man presented to the Emergency Department complaining of severe nasal bleeding. He had been diagnosed with nasopharyngeal angiofibroma and had a history of similar episodes of epistaxis requiring hospitalisation over a period of eight to nine months. Upon admission, the patient was stable and his vital signs were within the normal limits. His vision was clinically determined to be normal and there was no evidence of a relative afferent pupillary defect; his coagulation profile was also normal.

After primary resuscitation, the patient underwent endoscopic evaluation and nasal packing. Endoscopic examination revealed a pale pinkish mass with active bleeding.

Anterior nasal packing was performed using ribbon gauze soaked with antibiotic and paraffin. This procedure was effective in controlling bleeding and, after observation, the patient was transferred to the ENT ward. Two hours after nasal packing, the patient complained of slightly blurred vision. An urgent ophthalmological evaluation was performed by the ophthalmologist on call, and neither ophthalmoplegia nor a relative afferent pupillary defect were detected. Low-dose steroids were prophylactically administered to the patient. After sleeping for an hour, the patient woke up complaining of complete blindness in both eyes. Ophthalmological evaluation found that the patient had bilaterally dilated, fixed pupils with no reaction to light. He was immediately treated with injectable methylprednisolone (pulse steroid therapy) and the nasal packing was removed. However, nasal packing had to be reapplied owing to active bleeding. Pulse steroid therapy and vitamin C supplementation was administered for five days, but with no improvement in vision or pupillary reaction. Nasal pack removal had no effect on symptoms. The patient was advised to undergo urgent tumour excision with optic nerve decompression, but refused the procedure for personal reasons. The hospital is fully funded by government of India and all treatments are free of cost to patients.

## Discussion

Anterior nasal packing is a safe, simple and minimally invasive procedure requiring minimal expertise and infrastructure. The type of material used for packing varies with availability and the degree of bleeding. Most bleeding is

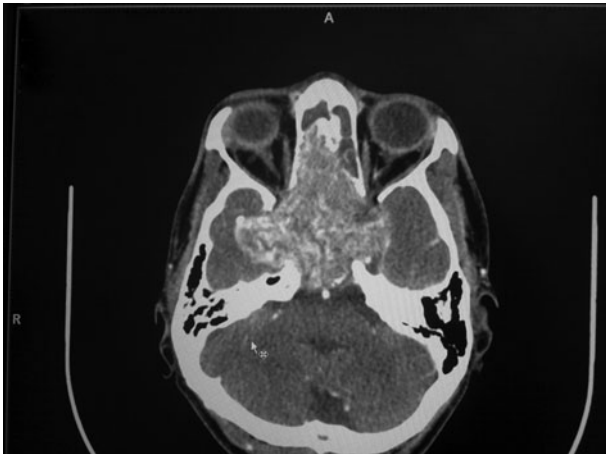


FIG. 1

Axial computed tomography image showing a well-enhanced mass involving the nasal cavity, nasopharynx, paranasal sinuses, infratemporal fossa, cavernous sinus and optic chiasma encasing the bilateral internal carotid artery with clival erosion and extension into the middle cranial fossa.

well controlled with a simple packing procedure. Although minor complications are common, most can be managed effectively with minimal intervention. Occasionally, major complications such as cerebrospinal fluid rhinorrhoea and paraffinoma have been reported.<sup>3,4</sup> A literature search did not yield any reports of blindness following nasal packing. One report discussed a case of temporary blindness and ophthalmoplegia caused by nasal packing following a traumatic nasal haemorrhage.<sup>5</sup> The present report is probably the first of bilateral blindness following nasal packing. Although very unfortunate for the patient, it is also a medico-legal liability issue for the treating physician. Thus, informed consent regarding the possibility of blindness is essential for high-risk cases.

In this patient, radiological imaging showed an enhancing mass involving the nasal cavity, nasopharynx, pterygomaxillary fossa, infratemporal fossa, cavernous sinus, optic chiasma and encircling bilateral internal carotid arteries, with clival erosion and middle cranial fossa extension (Figure 1). Though angiofibromas can cause blindness, they are usually unilateral and slowly progressive.<sup>6</sup>

The most plausible aetiology in this patient is that the packing material exerted pressure on the tumour, which in turn caused pressure to build up on the optic nerves bilaterally. There was no evidence of ophthalmoplegia in either eye, thus ruling out the possibility of cavernous sinus pressure symptoms. The possibility that an intra-orbital haematoma had resulted from tumour manipulation during nasal packing was also considered, but radiological analysis did not reveal any evidence of fluid collection.

Although rare, the possibility of posterior ischaemic optic neuropathy, probably peri-operative,<sup>7</sup> was also considered. Acute blood loss may have led to decreased perfusion in the watershed regions of the optic nerve in an 'at-risk' optic disc. However, the acute onset of blindness and lack of documentation of significant haemodynamic instability makes this diagnosis unlikely. Another possible cause of the acute loss of vision is pulling on the optic nerve caused by manipulation of the tumour during nasal packing.

- Anterior nasal packing is one of the commonest procedures in the Emergency Department
- Major complications are rare
- Bilateral blindness following nasal packing is a rare but possible complication
- Patients with nasal tumours close to the optic nerve or with a tendency to bleed profusely are most at risk
- Patient counselling and consent prior to nasal packing are essential to prevent medico-legal action

Pressure of the packing material on the optic nerve or the tumour pulling on the nerve seems the most plausible cause of such acute loss of vision. Medical management did not work well and although surgical management was proposed, this was declined by the patient. This decision severely limited the chance of improvement in vision.

### Conclusion

There is a high risk of blindness when a nasal tumour lies near to the optic nerve or has a tendency to bleed profusely. In such cases, patients should be informed of all possible complications including the risk of blindness and formal consent should be obtained prior to nasal packing. If vision starts to deteriorate, pulse steroid therapy should be initiated immediately. Surgical measures such as urgent tumour removal and optic nerve decompression can be offered to patients, although with a guarded prognosis.

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Dr C Preetam takes responsibility for the integrity of the content of the paper

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