

## Monocular blindness following fine needle aspiration cytology of a neck mass

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### Abstract

Fine needle aspiration cytology (FNAC) is commonly used in the diagnostic work-up of head and neck masses. Complications are extremely uncommon. We describe a case of monocular blindness following FNAC of a neck mass. To our knowledge this is the first case described in the literature.

**Key words:** Biopsy, Needle; Neck; Adverse Effects

### Introduction

Fine needle aspiration cytology (FNAC) is a useful diagnostic tool in the evaluation of masses in the head and neck, liver, breast, spleen, pancreas and lung. It is simple to perform, quick, accurate and cost-effective. Serious complications are uncommon and mainly described in FNAC of liver, lung, spleen or pancreatic lesions. In the head and neck, only minor complications have been reported with the exception of one case of mortality following FNAC of a carotid body tumour.<sup>1,2</sup> We describe a case of total unilateral blindness as a complication of FNAC of a neck mass.

### Case report

An 81-year-old male presented in July 1999 with a 3 cm × 3 cm firm and mobile lump on the right anterior triangle of his neck, with no other head and neck or ENT symptoms. The lump had gradually grown in size over several months.

He had pre-existing ischaemic heart and cerebrovascular disease, plus visual problems in the right eye, and had had a mild cerebrovascular accident (CVA) in February 1998 with left hemiparesis. Investigations revealed high cholesterol (7.2 mmol/l) levels and computed tomography (CT) scanning was normal other than mild cortical atrophy. A colour duplex scan of the extracranial carotid arteries revealed bilateral calcified plaques in the common carotid with lumen diameter reduced by about 30 per cent which was classified mild. There was no subclavian artery disease.

In November 1998 he had presented to the Ophthalmic Casualty Department with sudden right inferior haemianopia. Retinoscopy revealed an upper branch retinal artery occlusion. A repeat duplex scan of his carotids in February 1999 confirmed the earlier findings of a minimal 30 per cent stenosis, but in addition, a 29 mm × 24.3 mm mass was noted just anterior to the right external carotid artery near the carotid bifurcation. Over the next three months, his retinal artery occlusion gradually improved, and the vision in his right eye improved from 6/60 to 6/24.

A fine needle aspiration with a 23 gauge needle from the neck lump was performed in the ENT out-patient department in July 1999, following which his vision deteriorated over the next few hours. He was diagnosed in the Ophthalmic Casualty with an almost complete loss of vision on the right side and a lower branch retinal artery occlusion, but although no embolism was seen, it was considered likely that this was an embolic phenomenon related to the FNA close to his carotid tree. His vision did not improve thereafter and over the next eight weeks the right eye developed complete optic atrophy.

There was no evidence of any haematoma, infection or ecchymosis in the neck near the fine needle puncture site following the aspiration. There were no other neurological deficits suggestive of anterior or middle cerebral artery thromboembolism.

The aspirate has subsequently been reported to be acellular. The mass however has not increased in size, and a wait-and-watch expectant policy has been adopted, particularly in view of his risks for general anaesthesia.

### Discussion

Fine needle aspiration cytology of head and neck masses has high specificity, high sensitivity and very low morbidity and is therefore used routinely in the diagnostic work-up of such lesions. In several large series<sup>3</sup> no complication has been reported. The only minor complications generally noted have been bleeding, infection and inflammation.<sup>4,5</sup>

There have been a few case reports of ischaemic infarcts of thyroid and parotid<sup>6,7</sup> tumours following FNAC. This suggests vascular changes of traumatic origin following FNAC.

With the exception of a fatality following FNA of a carotid body tumour,<sup>1</sup> our case report is the first major complication reported following FNAC of a neck mass. This case developed ischaemic optic atrophy and irreversible total blindness following a FNAC. The patient had only a mild 30 per cent stenosis of the common carotid and atheromatous plaques in the carotid bifurcation, which are common in the elderly. Since the majority of sudden onset retinal artery occlusions are embolic, this case developed

an embolism following the FNA which is supported by the rapidity of onset of loss of vision. Since the mass was at the carotid bifurcation, as noted by the duplex scan, there is a strong possibility of a traumatic plaque dislodgment or thromboembolic event to account for the subsequent events.

Although FNA is a safe procedure, in the carotid region, caution should be exercised in cases of previously diagnosed carotid artery atherosclerosis especially with retinal complications. Careful insertion of the needle and minimal manipulation should be adopted to reduce the risks of embolic episodes.

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