Physical Signs

Vagal nerve schwannoma—a new diagnostic sign

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Summary: A case of vagal nerve schwannoma with a new physical sign is presented. The tumour was largely cystic and aspiration, performed twice, immediately elicited a cough reflex from the patient.

Treatment was by total excision and the patient made a good recovery. Complete cystic degeneration of a vagal nerve schwannoma is uncommon. A search of the literature has failed to find any previous reports of fine needle aspiration causing a cough reflex in these tumours.

Introduction

Fine needle aspiration is a standard technique in the management of patients presenting with neck lumps. Besides obtaining cells for diagnosis this procedure also confirms or refutes the presence of fluid and pus within the lump.

Aspiration of neck lumps does not routinely cause a cough. The effect reported here may be specific to the distortion of vagal afferents in the wall of a cystic tumour of the vagus nerve.

Case report

A 54 year old woman presented with a 4-month history of a painless swelling in the left side of her neck. Over the latter 5 weeks she had noticed some difficulty in swallowing, her voice was unchanged and normal and there was no associated pain.

Physical examination revealed a fit well nourished woman. There was a 5 cm × 8 cm swelling in the left side of her neck anterior to the sternomastoid and displacing it laterally. Inferiorly it extended to the upper border of the thyroid cartilage and superiorly under the angle of the mandible. It felt cystic, there was no pulsation and no bruit was heard on auscultation. Examination of the oropharynx showed a smooth submucosal swelling displacing the left tonsil across the midline, bimanual palpation confirmed that this swelling was in continuity with the swelling in the neck. The rest of the examination was normal; specifically the lower four cranial nerves were intact with good bilateral vocal cord movement.

Special tests, including routine haematology and biochemistry, were normal. Computerized tomography demonstrated that the tumour was cystic and multilobular, extending from the base of the skull to the lower border of the piriform sinus in the parapharyngeal space.

Fine needle aspiration cytology was performed. This produced a dirty straw coloured fluid and no cells were identified. This procedure was performed twice and on both occasions was accompanied by an immediate dry coughing that stopped soon after the aspiration finished.

Under general anaesthesia the left side of the neck was explored, removal of the cystic tumour required a mandibulotomy. The vagus nerve was identified entering the tumour inferiorly but was not found superiorly.

Postoperatively the patient had a temporary hypoglossal nerve palsy and a vocal cord palsy on the operated side.

Histopathological examination of the specimen showed it to be a schwannoma with marked cystic degeneration.

Discussion

Since the first pathological description of schwannoma by Verocay,¹ cited by Goode,² there have been regular reports of vagal nerve schwannomas in the neck, but this remains an uncommon tumour.

Our case illustrates a previously unreported physical sign. Although cough may be a presenting symptom^{3,4} and pressure on the tumour by clothing⁵ or examination of the neck^{4,6,7} have been noted to cause a cough, there is no recorded case of fine needle aspiration producing the same effect.

The reflex cough is caused by stimulation of

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vagal nerve afferents, in a similar fashion to the cough regularly elicited by stimulating Arnold's nerve during aural toilet. Indeed stimulation of vagal afferents during removal of schwannomas may cause profound bradycardia.⁸ In one case where aspiration was performed, on the operating table to facilitate removal, the patient suffered an immediate cardiac arrest after the removal of 15 cc

of fluid.⁹

Presumably a cough can only be elicited by aspiration if the tumour has undergone sufficient cystic degeneration to allow distortion and therefore stimulation of the vagal nerve afferents. On this basis solid tumours of the vagus nerve would not be expected to exhibit this phenomenon.

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