

Lipoma of the parapharyngeal space

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Abstract

A 75-year-old gentleman presented to our department with dysphagia, nocturnal cough and dysphonia. Clinical examination revealed a large parapharyngeal mass extending from the left nasopharynx to the glottis. A magnetic resonance imaging scan confirmed the lipomatous nature of the lesion and elegantly demonstrated its anatomy. We discuss the aetiology and management of such lesions and focus on the diagnostic radiology of the parapharyngeal space.

Key words: Parapharyngeal Space; Lipoma; Radiology

Case report

A 75-year-old gentleman was referred to the otolaryngology department by his concerned general practitioner, who had noticed a large mass in the gentleman's oropharynx. The patient complained of difficulty swallowing tablets and nocturnal coughing fits when recumbent. He stated these symptoms had been present for about 10 years but recently had become more pronounced. He felt his voice quality had changed, but denied any weight loss and was able to manage most consistencies of food. He was an ex-smoker of 20 years.

On examination, a large, smooth mass was easily visible on mouth opening and was seen to extend along the left oropharynx. Flexible nasendoscopy showed the mass extending from the left nasopharynx to the glottis, causing some distortion of the supraglottis without impinging on the airway. Examination of the neck revealed a smooth diffuse swelling extending adjacent to the left thyroid cartilage. Fine-needle aspiration of the mass revealed fragments of adipose tissue, with no evidence of malignancy. Initial computed tomography (CT) scanning of the neck demonstrated a well defined, lobulated, low-attenuation mass extending inferiorly, adjacent to the oropharynx and cervical vertebrae, causing deviation of the oropharynx, with some airway compression. The attenuation characteristics of the lesion were suggestive of lipomatous tissue.

In order to clarify the nature of the lesion further, a magnetic resonance imaging (MRI) scan was performed using coronal and axial T1-weighted and short tau inversion recovery (STIR) images, with axial T2-weighted images. These sequences showed a lobulated, well defined, 6 × 3 cm mass situated deep in the left parapharyngeal space, extending to the level of the hyoid (Figures 1 and 2). The high signal characteristics on T1 imaging, combined with complete suppression on STIR sequencing, confirmed the lipomatous nature of the lesion (Figures 3 and 4).

The surgical options for removing the lesion were put to the patient; however, he declined any surgical intervention. The patient was followed up regularly, and at the time of

writing remained well, 18 months from his initial presentation.

Discussion

Neoplasms in the parapharyngeal space are relatively rare, accounting for only 0.5 per cent of all head and neck tumours. Whilst lipomas are amongst the most common soft tissue tumours and frequently arise in the head and neck, the majority of these arise in the superficial and subcutaneous layers. Tumours of lipomatous origin are thought to make up between 1 and 2 per cent of all parapharyngeal tumours.^{1,2}

Such tumours tend to be slow growing and to present at an advanced stage. Dysphagia was the presenting complaint in our case, and similar lesions in the parapharyngeal and associated neck spaces have presented with sleep apnoea, dyspnoea and painless neck masses.³⁻⁵

Although this case report demonstrates a clinically striking example of a common tumour in an unusual site, the main aim of this article is to highlight the important role of diagnostic radiology in the evaluation of neck space masses. Imaging of the head and neck region has become increasingly sophisticated, and provides us with clear definition of soft tissue and fascial planes, the ability to differentiate between tumour and normal tissue, and delineation of vascular anatomy. Our case graphically demonstrates the ability of various scanning methods to differentiate between tissue characteristics, in that a definitive diagnosis was made on the strength of the radiological findings alone.

Computed tomography scanning is often the initial imaging modality for head and neck lesions as it is quick, easy to perform and accessible. Intravenous contrast administration allows identification of pathological rim enhancement (e.g. in malignant lymph nodes and abscesses) and increased definition of tumour bulk. However, malignant and inflamed tissue can be difficult to differentiate on CT scan. Magnetic resonance imaging provides superior delineation of soft tissues in any imaging plane; this is related to the ability of MRI to represent the biochemical composition of the tissues imaged.⁶

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FIG. 1

T1-weighted computed tomography image of parapharyngeal lipoma (coronal view).



FIG. 3

Short tau inversion recovery (STIR) sequence image of parapharyngeal lipoma, demonstrating complete fat suppression (coronal view).

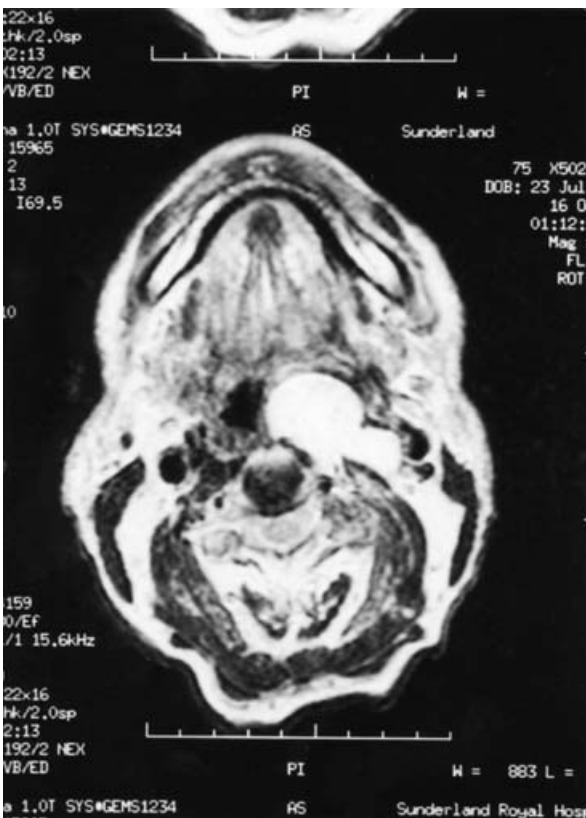


FIG. 2

T1-weighted magnetic resonance image of parapharyngeal lipoma (axial view).

T1 (longitudinal relaxation time) images are related to the time taken for excited protons to return to their normal position after a magnetic field has been applied, whereas T2 (transverse relaxation time) images reflect spinning protons moving out of phase with each other as they relax. T1-weighted images consequently provide high-resolution soft tissue detail, whereas T2-weighted images reflect abnormal biochemistry and provide better definition between normal and abnormal tissues, i.e. inflammation and tumour.⁷

Fat is represented by high signal intensity, i.e. it appears white, on both T1 and T2 image sequences. A well demarcated, homogenous, high-intensity lesion is clearly demonstrated in the left parapharyngeal space in Figures 1 and 2. The STIR sequence suppresses the high signal intensity from fat and allows easy differentiation from fluid and fluid-filled structures. As Figures 3 and 4 demonstrate, the use of STIR sequence imaging resulted in complete suppression of this signal from the lesion, again in a homogeneous manner. This, therefore, unequivocally demonstrated that the parapharyngeal lesion was lipomatous in nature. The homogenous appearance of the lesion, both on enhanced and suppressed images, confirmed the benign nature of the mass.

At the time of writing, this gentleman was under regular follow up to assess the size of the lesion and to monitor for any potential malignant change. There are reports of malignant transformation in upper aerodigestive tract lipomas.^{4,5} This gentleman refused any operative intervention and thereafter remained relatively asymptomatic. Malignant transformation would be demonstrated on



FIG. 4

Short tau inversion recovery (STIR) sequence image of parapharyngeal lipoma, demonstrating complete fat suppression (axial view).

MRI imaging as inhomogeneity of the lesion, with incomplete fat suppression on STIR sequencing. Surgical excision would then be indicated, via a trans-oral or cervical approach, with or without adjuvant radiotherapy if the lesion proved to be malignant.

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