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Case Report

Giant lipoma in the anterior region of the neck: A case report of a rare condition and review of literature ☆,☆☆

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ABSTRACT

Lipomas are benign and very common subcutaneous tumors of adipose tissue, which may occur anywhere in the body. Lipomas in head and neck regions are extremely rare. A giant neck lipoma is classified as a lesion greater than 10 cm in one dimension or weighing more than 1000 g. In this case report and review of the literature, a 66-year-old male with likely diagnosis of neck lipoma was under 5-year surveillance prior to development of giant neck lipoma. Computed tomography provided critical insight in the extent of neck mass in relation to surrounding structures in assessing possibility of malignancy and in guiding appropriate management.

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Introduction

Lipomas in the anterior neck region of the neck are extremely rare presentations. Computed Tomography (CT) and/or Magnetic Resonance Imaging (MRI) play an important role in

diagnosis and trajectory of treatment. However, giant neck lipomas (greater than 10 cm) with a rapid growth require further investigation with consideration of liposarcoma as a potential differential diagnosis. Given the nature of slow progression of lipoma, there is no clear guideline in interval progression imaging. Invasive procedures remain the mainstream approach for managing giant neck lipomas.

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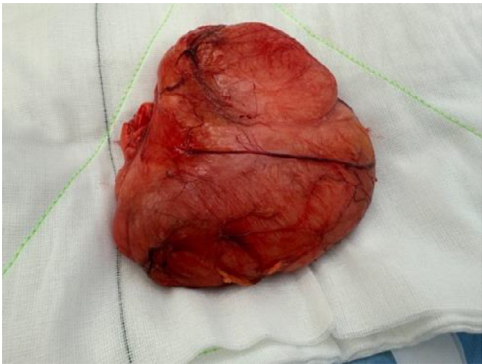


Fig. 1 – The excised mass measured 155 mm by 108 mm by 57 mm, with a volume of 954 cc.

Case report

A 66-year-old male patient referred by general practitioner with a progressive asymptomatic swelling on left side of

the neck. Clinical examination revealed a soft and mobile lump in the left anterior neck. Ultrasound (US) of the neck demonstrated a well-defined, slightly compressive, hyperechoic 102 × 92 × 24 mm (120 cc) lesion, deep to the sternocleidomastoid muscle (Fig. 2A). US findings were most in keeping with a lipoma. He was under annual surveillance over the 5 years, during which follow-up ultrasound indicated slow progression in size. However, in the last 3 months, there was a notably increased in size causing neck discomfort and cosmetic concerns. The subsequent US demonstrated an increased in size of the mass to approximately 116 × 104 × 84 mm (527 cc) (Fig. 2B). Additional CT confirmed the mass extending from the level of the C2 to T2 vertebra. It was causing mass effect with the larynx and trachea, which was displaced to the right (Fig. 3A and B). Even though he was asymptomatic, patient was referred to an endocrine surgeon for an urgent review. The patient subsequently underwent a surgical resection of lipoma through a transverse cervical incision. Intra-operatively, the mass had extended throughout the soft tissues of the posterior triangle of the neck. It was well-capsulated lesion with no intramuscular component. The excised mass measured

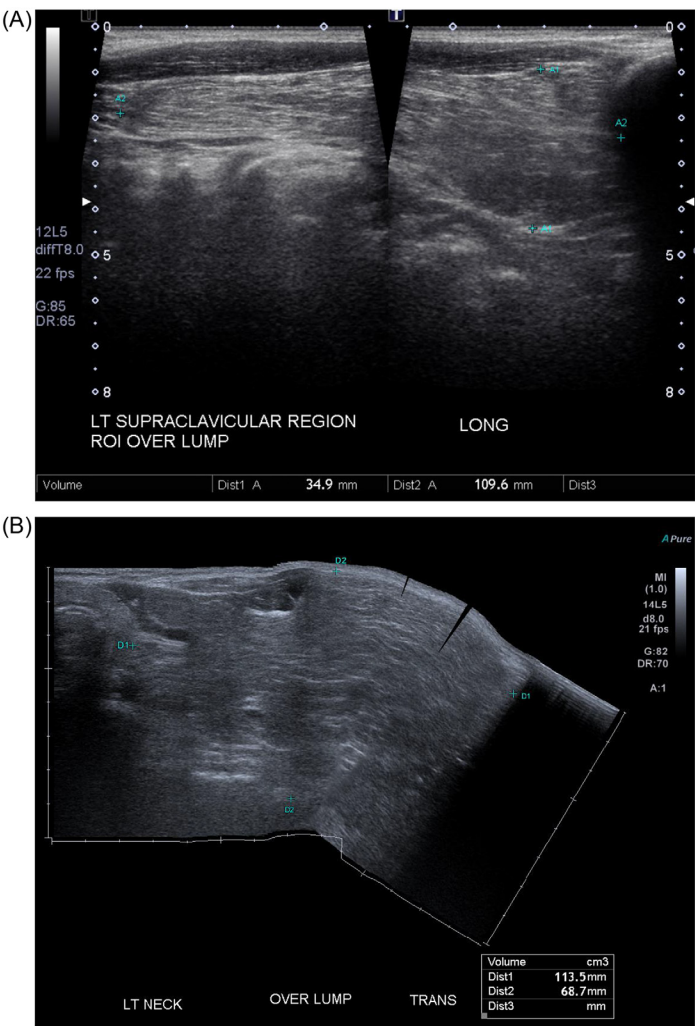


Fig. 2 – (A) Initial ultrasound show lipoma in the anterior neck region. (B) Subsequent ultrasound show increased lipoma in the anterior neck region.

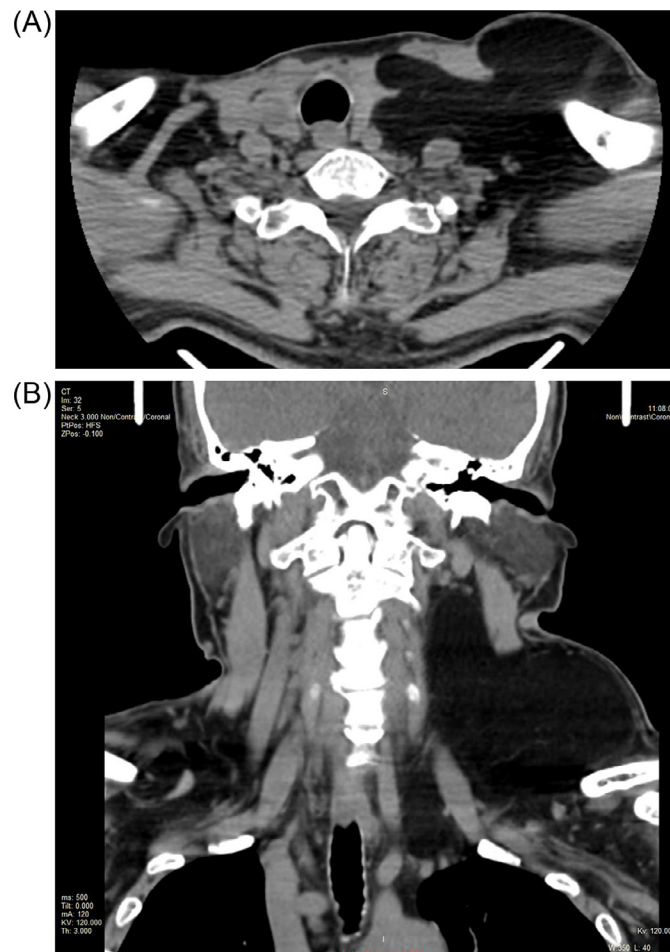


Fig. 3 – (A) Axial CT image show lipoma in the anterior neck region. (B) Coronal CT image show lipoma in the anterior neck region.

155 × 108 × 57 mm (954 cc) (Fig. 1). Patient was followed up 4 weeks postoperatively and recovered well without complications. The histopathology confirmed a circumscribed proliferation of mature adipose tissue without atypia consistent with a lipoma.

Discussion

Lipomas are benign subcutaneous tumors, composed of mature adipocytes and may occur anywhere in the body where fatty tissue is present [1,2]. The estimated incidence of lipoma is 2.1 per 1000 individuals per year, with approximately 13% occurring in the head and neck region [2]. The aetiology of lipoma remains unclear, however genetic predisposition may play a role with conditions such as familial multiple lipomatosis linked to specific genetic mutations, including those in the HMG2 gene and increased expression of MDM2 (murine double minute-2) [3]. Additionally, there is strong association between obesity, alcohol abuse, liver disease and diabetes and lipoma. Furthermore, there is some evidence suggesting that a direct trauma to the soft tissue may be associated with lipoma [4].

Most neck lipomas are small (less than 5 cm) and located in the posterior region, while anterior neck lipomas are extremely rare [5]. These lipomas are generally slowly progressive and largely benign. Most patients are asymptomatic. However, giant neck masses (greater than 10 cm) with a rapid growth rate, particularly in anterior neck, warrant closer surveillance and may necessitate early surgical intervention due to potential risk of respiratory mass effects and possibility of malignancy [4]. Monitoring these lipomas is essential to ensure timely management and mitigate any associated risks.

US is readily available as a first-line imaging modality for assessing soft tissue masses, including lipomas. US is also suitable surveillance imaging modality for smaller, superficial lipomas. However, its limitations become apparent in the anterior neck. Diagnostic imaging includes CT or MRI which is important in addition to US in understanding the size, depth and potential involvement of surrounding structures [3,5]. This is particularly important for anterior neck lipomas, where precise characterization can provide critical guidance for referring clinicians regarding appropriate management and it helps in assessing risk of complications [6]. MRI is the modality of choice for imaging lipomas compared to CT in further characterisation of soft tissue in relation to sur-

rounding vessels and its infiltration. In this case study, CT underestimated the extension and volume of lipomas due to its limitations in soft tissue differentiation [5]. This challenge may delay treatments for patients and emphasize the importance in MRI as an imaging investigation. MRI is routinely performed for patients with back lipomas that is greater than 5 cm as a preoperative imaging to evaluate intramuscular infiltration and to aid in surgical planning. Yet, limited accessibility and cost of MRI can be significant barriers. The interval surveillance imaging varies, which is heavily depending on size, location, and clinical symptoms of the patient. There is no consistency in recommended surveillance imaging.

Furthermore, the distinction between lipoma and well-differentiated liposarcoma remains challenging [3,7]. Lipomas exhibit homogenous fatty attenuation on CT and homogenous signal fat intensity across all pulse sequences on MRI [7]. In contrast, well-differentiated liposarcoma exhibit thickened septa, heterogenous characteristics including nodular and/or globular areas of nonadipose composition, and decreased percentage of fat composition [7]. When evaluating giant neck lipomas in the anterior region of the neck, it is essential to consider liposarcoma as a differential diagnosis [8].

Given the limitations of diagnostic imaging, invasive procedures such as Fine Needle Aspiration (FNA) or incisional biopsy could be performed. However, FNA and incisional biopsy are not reliable, and the histopathology result may often be inconclusive. Surgical treatment, such as through complete excision of masses or liposuction-assisted removal, remains mainstay of diagnosis and treatment of neck lipomas [9]. Simple lipomas have a recurrence rate of 1-5%, which is extremely low. Therefore, early surgical interventions should be considered over surveillance in patients with neck lipomas.

Radiological investigations play an important role in narrowing down potential diagnosis and relative risk of compression in surrounding structures. Given the nature of slow progression, there is no clear guideline in interval progression imaging. Also, surveillance imaging may not be routinely performed unless there are clinical concerns. It is critical to have a structured approach when it comes to neck masses.

Ethics approval

The case report generation process was discussed with our local ethics and governance team. No formal ethics approval was required following the discussions and therefore was waived.

Guarantor

Su Jin Lee.

Patient consent

The patient has provided a verbal and written informed consent for the publication of this case report. This consent includes the use of anonymized personal health information, clinical data and relevant medical images. All identifying details have been removed to ensure the confidentiality of the patient's identity in accordance with ethical guidelines and patient privacy regulations. The patient understands that the case report may be published in a medical journal and that their medical information will be shared in a de-identified manner for educational and research purposes.

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