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Case report

# Symptomatic head and neck lipomas

Y. Najaf*, C. Cartier, V. Favier, R. Garrel

*ORL et chirurgie cervico-faciale, hôpital Gui-de-Chauliac, CHU de Montpellier, 34090 Montpellier, France*

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ABSTRACT

*Introduction:* Lipomas are very common benign lumps that could be encountered in any part of the body but with limited proportion being present in the head and neck region.
*Case summary:* In this article, three different cases of symptomatic cervical lipomas were illustrated, with their different diagnostic as well as therapeutic approaches and will be discussed in light of medical literature.
*Discussion:* These cervical tumors tend to grow slowly giving variable signs that include dysphagia, dyspnea, dysphonia due to the mass effect of surrounding structures or can be present as simple as a cosmetic concern. Clinicians must bear in mind the malignant transformation of lipomas, which can be challenging to diagnose. With this article, authors will try to highlight the importance of maintaining a good communication between surgeons, pathologists and radiologists as an essential part of the medical management.



## 1. Introduction

Lipomas are benign tumors of mesenchymal origin that present almost 13% in the head and neck region [1]. Macroscopically, these tumors are smooth in consistency and variable presentation of symptoms according to their location, rate of growth and size, while anatomopathologically, present as a group of solitary vacuole fatty cells. Lipomas of the upper aerodigestive system often remain asymptomatic, however, symptoms might appear progressively including dysphagia, throat discomfort, dysphonia or dyspnea alarming for an immediate medical attention [2]. Imaging is an essential diagnostic tool for any painless cervical masse, which helps in minimizing differential diagnosis. In this case report, we describe 3 different presentations of cervical lipomas presented with different complaints and thus different managements.

## 2. Case 1

An 80-year-old man with a history of cardiovascular comorbidities complained of a 1-month history of vague discomfort on swallowing, breathing and chronic cough. Patient denied having any odynophagia, otalgia or weight loss. There was no cervical lymphadenopathy. A flexible endoscopic examination revealed a moderate bulging through the aryepiglottic fold, which corresponded clinically to an internal laryngocele. Laryngeal mobility was preserved. An injected CT scan (Fig. 1.) revealed the presence of a mass located on the pharyngo-laryngeal supraglottic wall compatible with a laryngocele but with a fatty density. An endoscopic Co2 laser resection was done and a lipoma like mass was extruded through the incision that was partially resected. This mass was histopathologically compatible with a lipoma. Postoperatively, patient described improvement of swallowing as well as breathing and was referred to speech and language therapist to optimize the results. A radiological evaluation revealed a reasonable reduction of the mass (Fig. 1). Annual follow-up was planned to evaluate the initial presenting symptoms for any relapses.

## 3. Case 2

A 49-year-old male presented a left large cervical mass with progressive dysphagia. The patient described neither dyspnea nor dysphonia. His physical examination was unremarkable apart from that cervical lump that was soft in nature, non-tender and extending beyond sternal notch. MRI imaging suggested a lipoma nature of this mass measuring approximately 10 cm-long and situated between the left common carotid artery, the internal jugular vein and the vagus nerve. As the patient was symptomatic, elective surgery was planned. Neuromonitoring was used to minimize the risk of recurrent nerve paralysis. A 5-cm latero-cervical incision was performed (Fig. 2). Complete resection of the tumor was performed. No neuro-vascular injury was encountered peroperatively

* Corresponding author.
*E-mail address:* yaser.najaf@gmail.com (Y. Najaf).

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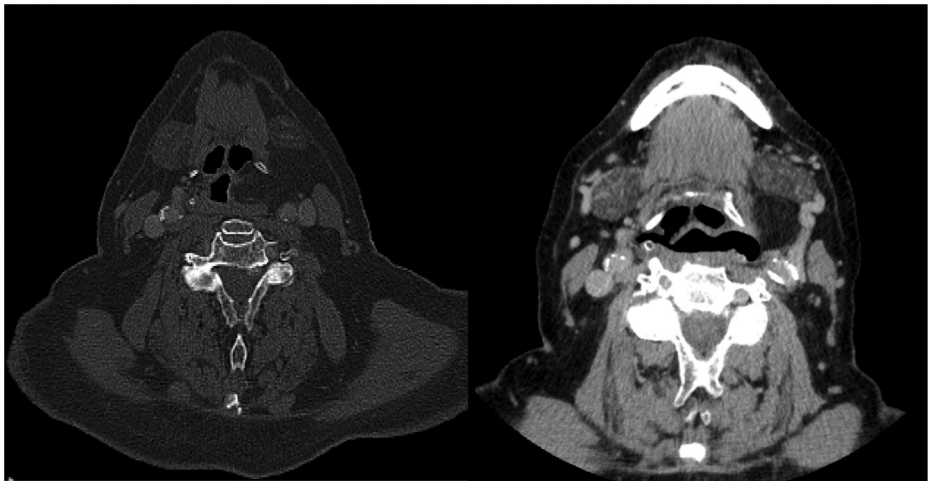

**Fig. 1.** Left: preoperative CT showing a bulging partially obstructive mass. Right: revealed the reduced volume of the mass.

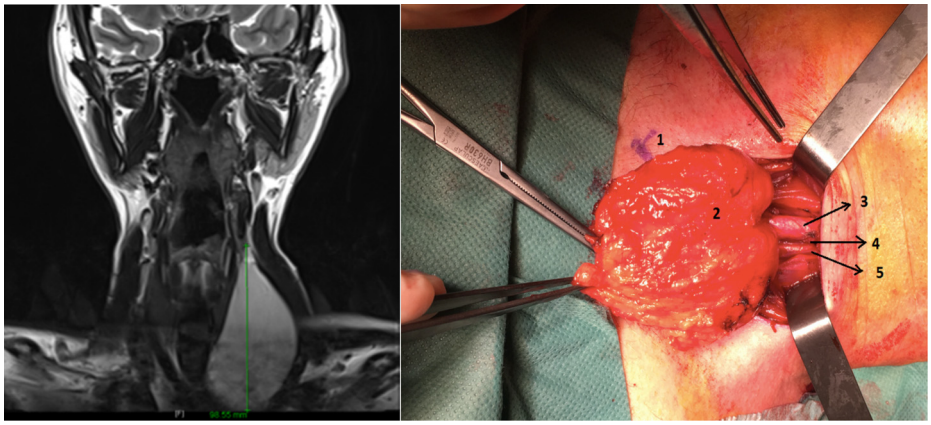


**Fig. 2.** Left: MRI preoperatively. Right: per-operative images: 1. sternal notch; 2. lipoma mass; 3. common carotid; 4. vagus nerve; 5. internal jugular vein.

nor postoperatively. Patient described complete resolution of dysphagia a couple of weeks later.

## 4. Case 3

A 64-year-old patient presented a 20-year-old history of a progressively evolving nuchal lipoma. He described a progressive neck pain without any neurologic involvement. Clinically (Fig. 3), the mass was smooth in consistency, non-tender and deeply seated. A cervical CT scan showed a massive lipoma measuring approximately $13 \times 8$ cm with suspicion of liposarcoma (centrally well defined adipose tissues and calcification). Hence, the patient was operated to have a histopathological confirmation as well as to relieve his symptoms. The resected mass, weighing around 450 g, was a benign lipoma. Patient described progressive improvement of his cervical pain but developed a hypertrophic scar treated with intra-lesional cortisone injection with overall good results.

## 5. Discussion

By analyzing these different cases of cervical lipomas, it can be seen that such benign tumors can pose initial diagnostics difficulties to clinicians especially when faced with symptomatic cervical masses. In one hand, these masses can be presented to clinicians with simple cosmetic concerns while on the other hand, such lipomas can produce signs of compressions to airway and to upper digestive tract or by suspicious malignant transformation.

Head and neck lipomas, although uncommon, but mostly located in the posterior cervical triangle [3]. We have presented 3 cases of the anterior cervical lipomas, a laryngeal lipoma and two large symptomatic cervical masses.

The first case, a rare pseudo-cystic supraglottic mass that was initially diagnosed as either a laryngocele or a retention cyst, was eventually a laryngeal lipoma evolving from laryngeal-ventricular complex. Epidemiologically, these tumors present only 0.6% all benign laryngeal masses [4] arising from fatty-rich areas in the epiglottis, aryepiglottic fold and the laryngeal vestibule [5].

In the second and third cases we illustrated the importance of having sufficient preoperative radiological images (Ultrasonography, CT or MRI scans) to minimize the differential diagnosis and to decide how extensive the intervention will be.

Ultrasound has been used as an initial diagnostic imaging tool for these lumps but their extension was difficult to assess by this mean of imaging alone. Classically, these masses appear as hypoechoic homogeneous lesions [6] with variable features as it extends deeper in the surrounding tissues [7].

MRI images of the mass helped the surgeon to anticipate the degree of lipoma infiltration to surrounding vessels and nerves preoperatively. Derin, A. et al. (2009) published an article about an infiltrating benign type of cervical lipoma that was complicated by carotid rupture preoperatively needing a carotid graft, which illustrate the need of optimal imaging techniques to verify any

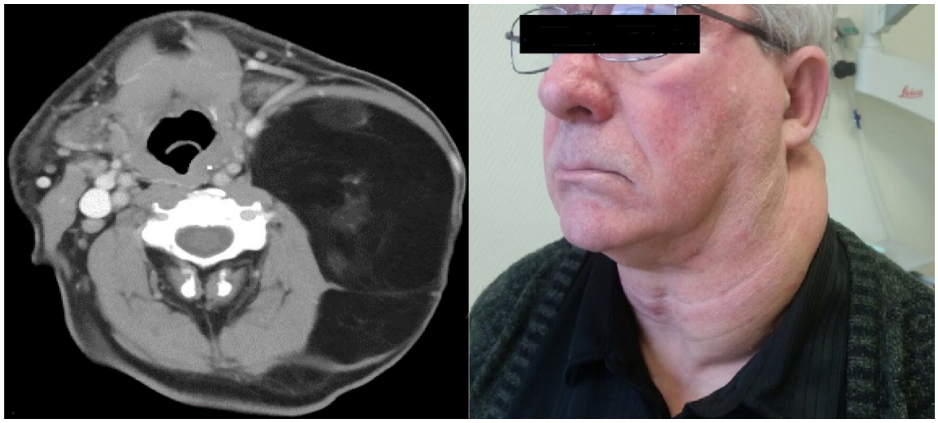

**Fig. 3.** Left: CT scan and preoperative look of the nuchal lipoma with its almost 180-degree cervical extension. Right: patient preoperatively.

**Table 1**
Important factors that favor the diagnosis of well-differentiated liposarcoma vs. lipoma.

| |
|---|
| Male sex |
| Age > 66 years |
| Low % of fat containing lesion (< 75%) |
| Presence of calcifications |
| Mass > 10 cm |
| Thick septa in the lesion (> 2 mm) |
| Non-lipomatous nodular or globular foci |

infiltrating variant of cervical lipomas in the perivascular region [8].

Moreover, imaging plays an important initial role in defining any suspicions malignant lipoma transformation. Benign lipomas in CT scan images appear as hypoattenuated homogeneous masses without contrast enhancement, while in MRI images they tend to have high signal intensity in T1-weighted images with progressive decrease in signal intensity in T2- weighting [9]. It has been proposed that the majority of lipomas can be diagnosed clinically, however, large head and neck lipomas (> 10 cm) with high rate of growth raise the possibility of malignant transformation [10]. Differential diagnosis of the second and the third cases after sufficient radiological examinations was either lipoma or liposarcoma. In the third case, despite being slow in growth the tumour's size exceeded a 13-cm with suspicious radiological element discussed earlier that indicated the surgical excision. Table 1 [11] illustrates statistically significant elements favouring well-differentiated liposarcoma from lipoma, which can be applied in this case.

## 6. Conclusion

In our review of medical literature, surgical strategy of cervical lipomas can be variable and should be adapted to the mass location, size, radiological imaging and to the surgeon's experience. Age and patient health status can also orient the surgeon towards surgical approaches with less postoperative comorbidity. In this peace of work, authors tried to present unusual symptomatic cases of cervical lipomas that ended-up by surgical interventions without forgetting to highlight the fact that the majority of asymptomatic cervical lipomas can be simply managed by good follow-up. Complete resection of these tumors is crucial to avoid recurrences with the emphasis in long-term follow-up especially for previously symptomatic cases.

## Consents

Patients included in the study have given their informed consent for this publication.

## Disclosure of interest

The authors declare that they have no competing interest.

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