

## Giant lipoma of the face and neck – a case report

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### ABSTRACT

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A 65-year-old patient with multiple lipomas of various body regions presented to the Maxillofacial Surgery Clinic in Białystok to treat a giant lipoma of the face and neck. After undergoing in-depth diagnostics (CT of this area), the patient was qualified and prepared for planned surgery in the clinic. The treatment of choice was a complete surgical excision of the lipoma. The intra- and

postoperative course was uneventful. Postoperative histopathological examination confirmed the tentative diagnosis established on the basis of the fine-needle aspiration biopsy and clinical examination.

**Keywords:** Giant lipoma, lipomatosis, benign tumor, face and neck.

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## INTRODUCTION

Lipoma (from Latin *lipoma*) is the most common benign tumor of mesenchymal origin. Mesenchymal neoplasms account for 40% of all soft tissue tumors [1]. The tumor is made up of cells resembling mature adipocytes, the periphery of which is usually surrounded by a capsule. Morphologically, lipoma cells do not differ from normal adipose tissue. Lipomas in their structure may contain fibers, vessels or mucus in the intercellular space [2]. Almost half of the lipomas occur in the fourth and fifth decades of life [3]. They are located mostly in the subcutaneous tissue of the neck, thorax and limbs. As the primary tumor they may be found in the CNS, larynx, and gastrointestinal tract [4]. Approximately 13% of these tumors are located in the head and neck region [5], while lipomas within the oral cavity are extremely rare [6]. Most lipomas have a diameter of about 1-3 cm but they can also reach significant size. The etiology of these tumors is unknown. Some authors believe that solitary lipomas are a consequence of mechanical injuries, while multiple lipomas have a genetic background [7]. Lipomatosis is often associated with various hormonal or nervous disorders and is a consequence of metabolic disorders [3]. The growth of the lipoma is slow and generally without complaints [6]. Lipomas are mainly surgically treated, i.e., they are enucleated with a capsule [3]; non-surgical treatment, e.g., local steroid therapy, [2] can be applied when lipomas are localized within the oral cavity. Lipomas rarely have recurrence.

## CASE PRESENTATION

The 65-year-old patient presented to the Maxillofacial Surgery Clinic in Bialystok because of the multiple lipomas on various body parts. The lesion on the right side of the face and neck appeared 4 years ago; it had been gradually growing without any pain. Within the last year the tumor grew considerably, causing limitation of neck movements.

The patient suffered from type 2 diabetes (he takes human insulin: 22 units before breakfast and 14 before dinner), hypertension (he takes 80 mg of valsartan in the morning, 1.5 mg of indapamide in the morning), chronic stable coronary disease (the patient takes 5 mg of bisoprolol fumarate in the morning), hyperlipidemia (he takes 20 mg of rosuvastatin at night), Addison-Biermer disease (untreated) and multinodular goitre in euthyrosis. Among the surgeries the patient underwent were removal of the appendix in 1962, and non-ST-elevation myocardial infarction treated with percutaneous coronary intervention GO with drug release stent and POBA GM (April 2013).

The patient had been a smoker for 30 years and smoked about 20 cigarettes per day.

Physical examination revealed the pyknic body type, height 176 cm, weight 85 kg; respiratory sounds over the lung fields were normal, pulse rate 68, heart sounds were pure with normal acceleration, blood pressure 135/85 mm Hg; soft, painless abdomen with visible postoperative scar on the right side of the lower abdomen. A 12 x 8 x 7 cm tumor covered with smooth flesh-colored skin with vascular markings was visible on the right side of the cheek (parotid, submandibular and retromandibular region). On palpation the lesion was elastic - soft, painless, translucent with respect to the lining and the base.

On examination there was a restricted lateral movement (to the right) of the neck. The regional lymph nodes of the neck were not enlarged. The breathing and swallowing was maintained without pathological disturbances. In addition, tumors of similar clinical character were found in other parts of the body: solitary lipoma in the parasternal region of the right side of the thorax with a diameter of about 5 cm, and two lipomas in the neck area with a diameter of about 5 cm each. Glucose levels in the daily sugar profile of insulin treatment did not exceed 160 mg/dl. Other results of biochemical and morphological blood tests fell within the normal range. ECG sinus rhythm had a frequency of 61 beats/min.

X-ray examination of the neck revealed unaffected diaphragm and angles, lung fields without fresh focal lesions and a heart at the upper limit of normal. Ultrasound examination of the right side of the neck showed a focal lesion with a slight increase in its echotexture, smooth outline and dimensions of 40 x 11 mm, of the nature of a lipoma.

The thyroid gland was heterogeneous (RTL: 65 x 33 x 31 mm; LTL: 61 x 27 x 25 mm). In both lobes hyperdense nodules were found: in the right lobe several nodules up to 15 mm in diameter, in the left lobe, in the lower pole, the largest nodule with diameter 18 mm. In the area of the right angle of the jaw, there was a non-homogeneous nodule sized 120 x 53 x 35 mm, which was most likely coming out of the parotid, and lymph nodes were enlarged (the largest one was 22 x 10 mm in size; computer tomography, CT, scan of the face and neck was recommended). In the right occipital region there was a homogeneous mass tissue of approximately 53 x 21 mm with the nature of a lipoma.

In the subcutaneous tissue of the neck area there was adipose tissue concentration of approximately 54 x 20 mm (Fig. 1). Fine-needle aspiration biopsy of the neck area revealed lipid droplets in the blood and adipose tissue fragments, indicating benign lesions.

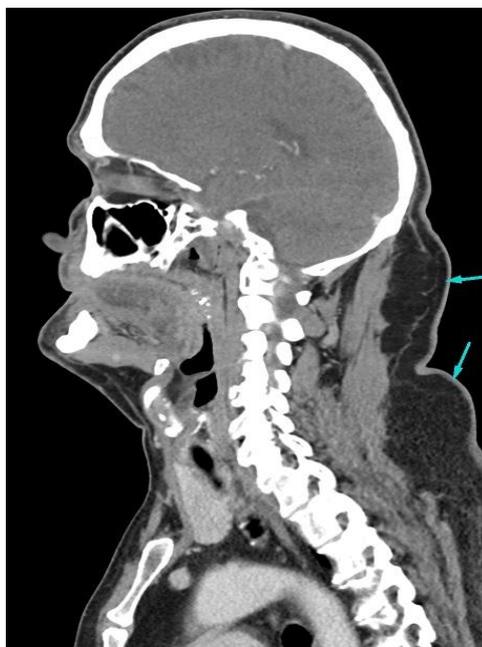
CT showed a tumor with adipose tissue density of 87 x 63 x 63 mm (HF x AP x RL) below the right ear. The upper pole of the lesion started about 11 mm below the inner ear. The tumor formed

at the back and moved forward of the parotid gland and wedged medially behind the ramus of the mandible and adhered to the internal pterygoid muscles (Fig. 2).

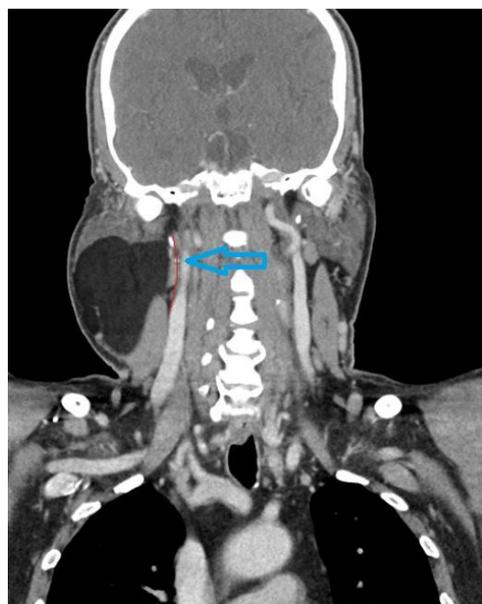
The frontal outline of the tumor was adjacent to the mandible and the masseter muscle, and in the lower part the tumor deformed and moved the submandibular gland slightly to the right. The

growth was medially adherent along the sternocleidomastoid muscle.

Within the tumor there were thin, fibrous compartments; apart from that the tumor was homogeneous. The right parotid gland was constricted. Throat and larynx structures were without identifiable pathological lesions (Fig. 3). Lymph nodes of the neck were not enlarged.



**Figure 1.** CT scan in sagittal plane. Tumors of the neck and the occipital region



**Figure 2.** CT scan in coronal plane. Encapsulated tumor of the right parotideomasseteric region occupying the parapharyngeal area



**Figure 3.** CT scan in horizontal plane. Tumors of the right preauricular and left neck region

On the basis of the above tests as well as the internal and anesthetic consultations, the patient was qualified for surgical treatment in the Department of Maxillofacial and Plastic Surgery of the Medical University of Białystok. After admission, the glucose level in the daily sugar profile of insulin treatment did not exceed 140 mg/dl. Other results of biochemical and morphological blood tests fell within normal ranges. Prior to the procedure, antibiotic prophylaxis (2g of cefazoline) was administered intravenously. Under general tracheal anesthesia, through the submandibular cutaneous incision to the ear lobe, the tumor was visualized and then enucleated and delivered as a whole.

After the haemostasis of the tumor bed had been performed, Redon's drain was removed by a separate incision, and the wound was closed with running subcuticular sutures. The growth was sent for histopathological examination. The results included a macroscopic image of postoperative material revealing encapsulated, adipose tissue neoplasm sized 11.5 x 7 x 7 cm with a pathological diagnosis of lipoma. The postoperative period was without complications. Facial nerve and facial expression were preserved. The patient, in general and local good condition, was discharged home 3 days after surgery with a recommendation for a follow-up visit to the clinic to schedule the removal of the remaining tumors.

The term "giant lipoma" is used in the literature for tumors larger than 10 cm. In the reported case the tumor exceeded this size. Giant lipomas are located mainly in the limbs [6]; however, the described lesion was located within the neck and face region. In addition to the clinical examination, the identification of a lipoma is facilitated by imaging tests such as ultrasound, CT,

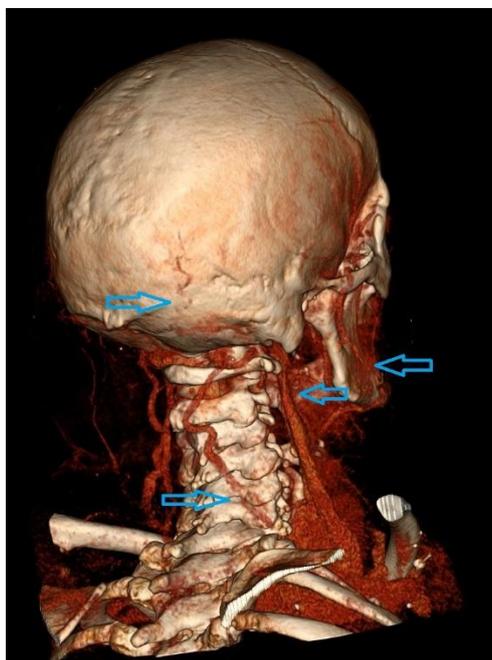
and MRI [8], which are required in cases of lipomas localized within the mediastinum or retroperitoneum [10], but they are also very helpful in the diagnosis of face and neck lipomas due to the great number of important anatomical structures that are localized there and should not be damaged during surgical treatment.

Clinical manifestations depend on the location of the tumor [9], sometimes tumors imitate neoplasms or post-traumatic lesions [7]. In the case of mediastinal lipomas, the most common are dyspnoea, cough, hoarseness, dysphagia, haemoptysis [12], in the lipoma of the face and neck there might be dyspnoea, hoarseness, dysphagia, cervical spondylitis and restriction of neck movement, as found in the presented patient. Often lipomas identical with those described in the case study do not give any symptoms but cause discomfort. Giant tumors localized mainly in the extremities can squeeze vessels and cause chronic venous insufficiency [9]. In the presented patient the previously mentioned neck and facial symptoms were not reported. Only the CT of the face and neck revealed that the tumor deformed the internal jugular vein on the right side (Fig. 4).

The recommended method of treatment is a complete tumor capsule removal of the tumor [3] and histopathological examination of the removed tissue. In unclear cases pathomorphological intraoperative examination is necessary [3]. This procedure was also implemented in the patient described. Due to the location of the lipoma, this case required extensive access and careful removal of the tumor because the tumor affected the fascial spaces of the face, mainly in the preauricular area, as well as posed an increased risk of damage to the facial nerve branches, (facial paresis) and parotid glands

during the lipoma surgical removal. As for head and neck, topical steroid therapy, ultrasound and liposuction [2] are also recommended among

therapeutic methods, and CO<sub>2</sub> laser treatment [2] is used for the lipoma localized within the oral cavity.



**Figure 4.** CT scan of the vascular system of the neck with 3D reconstruction. The tumor deforms the indicated veins of the neck (i.e., internal jugular vein, facial vein)

However, these methods do not allow for the accurate histopathological verification of the removed (destroyed) tissues. This is important because large and long-growing lipomas may turn into malignant tumors (sarcoma) [14].

The prognosis for solitary encapsulated tumors is good.

However, in the multiple and non-encapsulated neoplasms, recurrence [14] is more common, as in Madelung's disease, whose etiology is not completely understood, and whose diffuse adipose tissue growth and progressive character represent a major therapeutic challenge [15].

## CONCLUSIONS

Lipomas are slow-growing benign tumors whose diagnosis, differentiation and treatment, especially in their superficial location, usually does not cause any major difficulties.

However, removal of face and neck lesions should be performed with great care due to the complex anatomy to avoid morphologic and functional disorders that may lead to disfigurement and a significant deterioration of the patient's quality of life.

Each removed tumor, despite the fact that it is macroscopic, must be subjected to a histopathological verification in order to exclude

malignancy.

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## Conflicts of interest

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the review reported. All authors declare any financial or other potential conflict of interest.

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