GIANT LIPOMA AT ATYPICAL LOCALIZATION

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ABSTRACT

Lipoma is a benign fatty tumor of mesenchymal origin, consisting of mature adipocytes,the pathogenesis and etiology of which remain not completely clear.

Diagnosis is based on the clinical presentation of painless, round,mobile,soft and doughy sensation in the subcutaneous tissues, but they can also be found in deeper tissues such as the intermuscular septa, abdominal organs, oral cavity, internal auditory canal, cerebellopontin angle, and chest, as a result of which various specialists doctors are involved in the examination of the patient to obtain the results of ultrasound, magnetic resonance imaging.In addition, a histological examination is performed to exclude liposarcoma.

We present a clinical case of giant lipoma in a patient with a rare location of the tumor on the skin of the temporo-zygomatic region of the face.

INTRODUCTION

A lipoma is a common benign tumor composed of mature fat cells; it can occur anywhere there is adipose tissue, but most often (98%) it is located subcutaneously and in the deep soft tissues._In 94% of cases, lipomas are solitary, but occasionally they are multiple(1)

Lipomas occur in patients of all age groups, but usually first appear between the ages of 40 and 60 years (2) . Lipomas are often found in members of the same family,Hereditary tumors are usually located symmetrically. An association with genes on chromosome 12 has been described in the literature, which was found in some solitary lipomas.In addition, in some cases, a mutation was identified in the fused HMGA2-LPP gene(3)

The clinical presentation of a lipoma is characterized by a rounded, painless nodule of soft consistency (doughy, jelly-like), which is mobile in relation to the surrounding tissues.The size of the tumor varies from 1 cm to >10 cm(2)

Deep lipomas have a denser consistency due to pseudopod-like processes, which allow the tumor to spread through interfascial spaces and compress underlying organs(1)

Several special forms of lipomas are distinguished(1,2)

1) Perineural lipoma affects the median nerve and in most cases is accompanied by macrodactyly.

2) Lumbosacral lipoma is associated with spina bifida and intraspinal lipoma, lipoma of the tendon sheath and synovial membrane of the joint

3) Intramuscular and intermuscular lipomas infiltrate the muscles

4) Myolipoma of soft tissues (rarely subcutaneous)

5) Angiomyolipomas most often develop in the kidneys

6) Adenolipoma – a variant of lipoma with components of sweat gland structures.

DIFFERENTIATING LIPOMA-LIKE TUMORS

FEATURES	WELL DIFFERENTIATED LIPOSARCOMA/ATYPICAL LIPOMATOUS TUMOR	ATYPICAL SPINDLE CELL/PLEOMORPHIC LIPOMATOUS TUMOR	LIPOMA
Clinical feature	Deep seated,painless,increase in size,Retroperitonium(most common site)	Usually in the subcutis,sometimes painfull	Painless-superficial
Molecular/cytogenetics	Supernumerary ring and giant marker chromosome12q13-15	Deletions or losses of Rb1	No ring chromosomes but rearrangement in12qgene(HMGA2gene)
IHC	MDM2/CDK4 nuclear expresssion	No MDM2 Over expression	No MDM2 Overexpression
Histologic features	Nuclear atypia in stromal cells and fat cells	Atypical stromal cells,adipocytes,lipoblast and multinuclear cells	Mature adipocytes with fibrous septa.(No atipcal stromal cells)

In rare cases, lipomas are associated with one of the symptoms of certain hereditary diseases.
In Cowden syndrome, multiple lipomas and hemangiomas are present(1,4,5);
in Gardner syndrome, lipomas occur along with sebaceous cysts, osteomas, and intestinal polyps.

In Madelung's disease, the lipomas have a collar-like appearance, as in multiple symmetrical lipomatosis, the lipomas in the occipital region, neck area.
Bannayan–Zonana syndrome is characterized by a congenital combination of multiple lipomas, including lipomas of internal organs, along with hemangiomas and macrocephaly.

Cases have been described where lipomas developed in the area of blunt trauma(3). The pathogenetic link between soft tissue trauma and the formation of post-traumatic lipomas is discussed.

Currently, there are two possible explanations for their relationship: the formation of post-traumatic lipomas may be the result of fatty tissue protruding through the fascia as a result of direct impact.

Post-traumatic lipomas can form as a result of differentiation and proliferation of preadipocytes mediated by the release of cytokines after soft tissue trauma and hematoma formation(6,7)

The diagnosis of superficially located lipomas is based on the use of additional diagnostic methods: X-ray,computed tomography (CT),ultrasound examination,and biopsy(3)

X-ray computed tomography (CT) allows for a clearer differentiation between adipose tissue and denser soft tissue structures.

On ultrasound, lipomas appear as hypoechoic formations with a thin capsule, located within the adipose tissue.

In all cases needle biopsy with cytological examination is used. Laboratory testing in the case of a lipoma has no independent value for making a diagnosis. In case of hospitalization for planned surgical removal of a lipoma, a general clinical laboratory examination is performed (complete blood count, urinalysis, biochemical blood test, blood glucose, HIV test, syphilis test, hepatitis tests).

The first line of therapy for lipomas is surgical excision.

Excisional treatment usually leads to a cure.

Non-excisional treatment of lipomas is quite common and includes steroid injections and liposuction. Steroid injections lead to local fat atrophy, subsequently reducing the size of the lipoma and, in some cases, leading to its complete regression. Injections are best performed when the lipoma diameter does not exceed 2 cm.

The prognosis for benign lipomas is favorable. Recurrences occur in cases of incomplete removal of the fibrous capsule.

CLINICAL CASE DESCRIPTION

About the Patient

Patient K,43 years old, presented to the pathology department of government medical college jhunjhunu (BDK hospital) complaining of a bulky mass on the skin of the left temporomandibular (temporo-zygomatic) region. Subjective complaints included increased sensitivity of the skin surface over the mass (paresthesia) and occasional pain during the movement of facial muscles.

Medical History: The patient had noticed the condition for 10 years, first observing a small, mobile "ball-like" mass on the skin of the temporal region. The mass gradually increased in size, especially after repeated blunt trauma to the area. He did not seek medical attention or treatment. Recently he noted that difficulty in facial muscle movements and chewing.

Local examination: A node is located on the left temporomandibular region, protruding 3 cm above the surrounding skin, measuring 15.5 × 10.8 cm.On palpation, the node is of tight-elastic consistency, mobile, painless.Peripheral lymph nodes are not enlarged.

To verify the diagnosis, the patient underwent a comprehensive examination,including a pathomorphological study of the node biopsy and an ultrasound of the mass.

Pathomorphological Study : The pathomorphological picture shows a lobular structure consisting of mature fat cells, with a well-developed capillary network visualized between them .

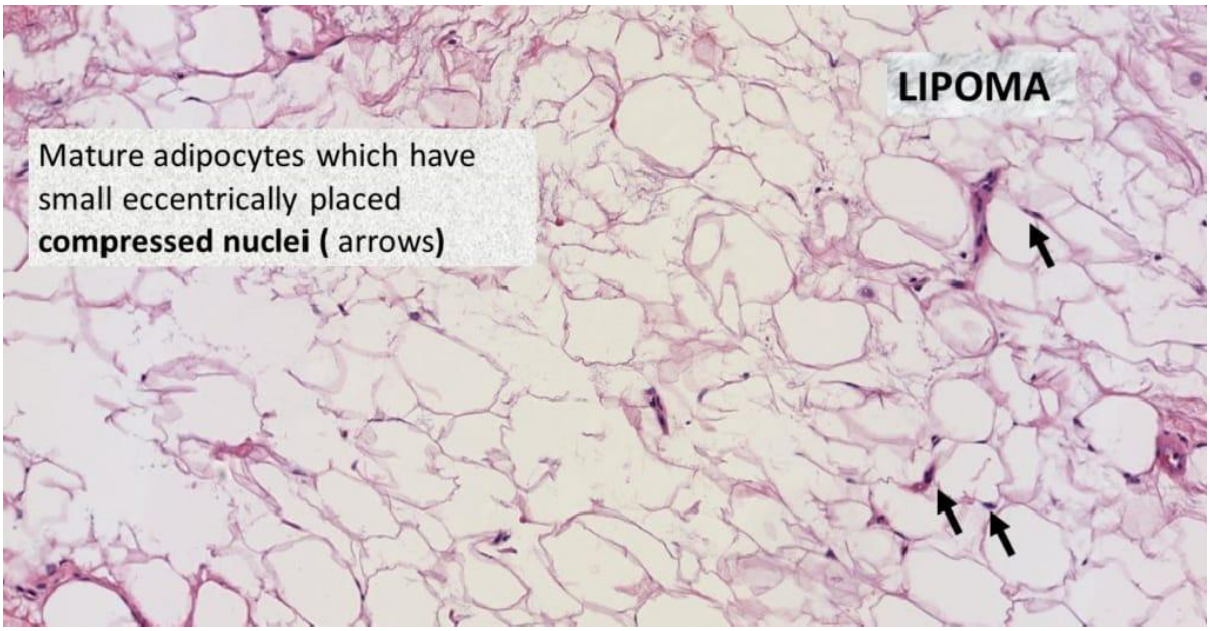

Fig. Patient K Pathomorphological picture (hematoxylin-eosin staining):— lobular structure consisting of mature fat cells which have small eccentrically placed compressed nuclei with a well-developed capillary network

Ultrasound Data: An oval, hypoechoic nodal structure surrounded by a fibrous capsule is visualized, which is characteristic of a lipoma.

Diagnosis

Based on the additional examinations, a final diagnosis was made: **"Solitary giant lipoma of the facial skin."**

Treatment

Given the giant size of the tumor and its complex location in the temporomandibular region, the patient underwent surgical excision of the lipoma under local anesthesia using an oblique approach along the anterior border of the left sternocleidomastoid muscle. Since the lipoma was entirely localized within the subcutaneous fat layer and showed no signs of infiltration, a resection of the tumor was performed within the subcutaneous fat, followed by a revision of the surgical wound and the application of cosmetic sutures.

In the postoperative period, facial expressions and sensitivity in all branches of the trigeminal nerve were fully restored.

DISCUSSION

In this article, we presented an unusual clinical case of a giant lipoma in the temporomandibular region,successfully treated by surgical removal.The interest of this case lies not only in the atypical location near the trigeminal nerve but also in its giant size, reaching 15 cm in length and nearly 11 cm in width.The long medical history and intensive growth following repeated blunt trauma reported by the patient are noteworthy.

CONCLUSION

The pathogenesis of lipoma development due to repeated blunt trauma is insufficiently studied.Timely medical consultation,adequate diagnosis, and treatment of lipomas in the early stages will prevent the risks of the lipoma growing into malignant nature,cosmetic effect,growing into deep tissue,joint and nerves.The need for an interdisciplinary approach and thorough examination of patients with lipomas is evident.

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- **Patient permission:** The patient voluntarily signed informed consent for the publication of personal medical information in depersonalized form.

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