



## Clinical Case

# Post-Traumatic Scalp Lipoma: A Case Report

*Lipome post traumatique du cuir chevelu: à propos d'un cas*

Zilefac Brian Ngokwe<sup>1,2,\*</sup>, Kharim Lyonga Charles<sup>1,2</sup>, Achumbom Haggai Akumbom<sup>1,2</sup>, Fai Karl<sup>1,2</sup>

### Affiliations

<sup>1</sup> Faculty of Medicine and Biomedical Sciences, University of Yaoundé I

<sup>2</sup> Cameroon English Speaking Medical Students Association (CAMESA)

\***Corresponding author.** Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Cameroon.

E-mail address: [brianforever25@yahoo.com](mailto:brianforever25@yahoo.com)

**Keywords:** Scalp lipoma, trauma

**Mots clés :** Lipome du cuir chevelu, traumatisme

### Article history

Submitted: 16 February 2023

Revision requested: 6 March 2023

Accepted: 12 February 2023

Published: 28 February 2023

### RÉSUMÉ

Lipomas are a type of mesenchymal neoplasm that most commonly occurs in the subcutaneous compartment. distributed throughout the body. These tumors are most commonly found in the upper part of the body. Lipomas grow slowly and are usually small, weighing only a few grams. A link has been established between soft tissue trauma and the development of lipomas, which have been dubbed posttraumatic lipomas. We present a case of a solitary slowly evolving fronto-parietal scalp lipoma following a local blunt trauma.

### ABSTRACT

Les lipomes sont un type de néoplasme mésoenchymateux qui survient le plus souvent dans le compartiment sous-cutané. Ils sont distribués dans tout le corps. Ces tumeurs se trouvent le plus souvent dans la partie supérieure du corps. Les lipomes se développent lentement et sont généralement petits, ne pesant que quelques grammes. Un lien a été établi entre les traumatismes des tissus mous et le développement de lipomes, qui ont été baptisés lipomes post-traumatiques. Nous présentons un cas de lipome solitaire du cuir chevelu fronto-pariétal à évolution lente suite à un traumatisme local contondant.

## INTRODUCTION

Over 80% of the lipomatous benign tumors that occur are ordinary lipomas, and only about 13% of these occur in the head and neck region, most commonly in the posterior neck. [1] Lipomas are adipose tumors that grow slowly and are almost always benign. They are most commonly found in the subcutaneous tissues.

While solitary lipomas are more common in women, multiple tumors (known as lipomatosis) are more common in men. [1] is frequently encased by a thin layer of fibrous tissue. [2] Because they typically grow without infiltrating neighboring structures, they can be easily excised with low recurrence rates.

Benign lipomas are relatively uncommon due to the intrinsic anatomy of the scalp and face, with a case prevalence of 2%-14%. [3-5]

## CASE PRESENTATION

A 43 year old woman consulted in September 2020 for a right frontal scalp swelling, non-tender on palpation, soft and fluctuating on palpation, mobile on the superficial plane and had been present for 5 years following a trauma at the local site had slowly grown in size over time motivating the present consultation.

The general state of health and medical history were unremarkable.

Work ups: All pre-operative tests were normal

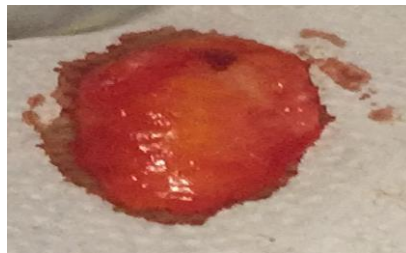
Treatment: Surgical resection performed under local anesthesia.



Pre-operative views of the lipoma



Per-operative view



Benign tumor (Lipoma) after excision



Post-operative view with coronally placed simple sutures

The post-operative follow up was simple

## DISCUSSION

The pertinence of this case is twofold: the unusual location and the possible post-traumatic etiology.

The patient's age of 43 years falls within the normal range of lipoma, which is 40-60 years [6-8].

Lipomas typically present clinically as soft, solitary, painless subcutaneous nodules that are mobile and do not have epidermal change. By gently sliding the fingers off the edge of the tumor, a characteristic "slippage sign" can be elicited. They are typically slow-growing and may reach a mature size [9,10].

Lipoma's precise etiology is still a mystery.

A link has been established between soft tissue trauma and the development of lipomas, which have been dubbed posttraumatic lipomas.[11]

Few studies suggest that blunt trauma can cause rapid proliferation of adipose tissue due to rupture of the fibrous septa and anchorage connections between the skin and deep fascia, in which the fat is normally contained under pressure and becomes herniated. [6,12]

However, adipose tissue migration from deeper planes cannot be considered in the scalp, and the progressive growth of these tumours contradicts the 'fat herniation' theory [12].

In the case of lipoma arborescens, where a lipoma develops in the tendon sheath and synovial membranes rather than the subcutaneous tissues, there is some evidence that trauma may play a role in promoting a

benign neoplasm; thus, these inflammatory processes capable of promoting lipoma formation in the joints may induce similar growth in the subcutaneous tissue after an acute trauma. [12]

The differentiation of mesenchymal precursors (preadipocytes) into mature adipocytes could explain the formation of a subcutaneous lipoma. This process could be triggered by a variety of factors, including local or systemic growth factors, inflammatory mediators, or hematoma degradation products. [12]

Additionally, it has also been proposed that preadipocyte differentiation and maturation may be caused by local inflammation caused by trauma. [6] Adipocytes are plastic and can change size and number in response to metabolic changes (generation of new cells through adipogenesis or elimination of cells through necrosis or apoptosis) [13]

Trauma can cause necrosis in adipose tissue as well as local inflammation, which can lead to the formation of lipomas. [2,14]

In our local context, a case of a lipoma with a post-traumatic origin has been described [15].

We used simple sutures with minimal tension while respecting the relaxed skin tension lines [16] that run in a coronal direction at the level of the scalp [9] to minimise excessive scarring, particularly in our case with a Fitzpatrick skin type VI. [17,18]

## CONCLUSION

Lipoma is a benign tumor of fat cells with unknown pathogenesis.

The scalp location is unusual and can be of significant aesthetic concern for patients, necessitating little or no post-surgical excessive scarring.

Lipoma can be caused by trauma in several ways.

The fat herniation hypothesis does not appear to be viable in the scalp, but inflammatory explanations are more acceptable and should be investigated further.

#### ACKNOWLEDGEMENTS

The authors would like to express their gratitude to the Cameroon English Speaking Medical Students Association (CAMESA)

#### REFERENCES

1. Abd El-Monem MH, Gaafar AH, Magdy EA. Lipomas of the head and neck: presentation variability and diagnostic work-up. *The Journal of Laryngology & Otolaryngology*. 2006 Jan;120(1):47-55.
2. Charifa, A., Azmat, C. E., & Badri, T. (2018). Lipoma pathology.
3. Leung LK. Differential diagnosis of soft scalp lumps. *BMJ Case Rep*. 2011 Nov 15;2011:bcr0720114492.
4. Truhan AP, Garden JM, Caro WA, Roenigk HH Jr. Facial and scalp lipomas: case reports and study of prevalence. *J Dermatol Surg Oncol*. 1985 Oct;11(10):981-4.
5. El-Monem MH, Gaafar AH, Magdy EA. Lipomas of the head and neck: presentation variability and diagnostic work-up. *J Laryngol Otol*. 2006 Jan;120(1):47-55.
6. Szewc M, Gawlik P, Żebrowski R, Sitarz R. Giant Lipoma in the Fronto-Temporo-Parietal Region in an Adult Man: Case Report and Literature Review. *Clin Cosmet Investig Dermatol*. 2020 Dec 24;13:1015-1020.
7. Busbaih Z, Almohammed Saleh AA, AlMaghlouth MK, Albeladi AM, Alali T, AlGhadeer MS, Odeh A. Giant Breast Lipoma: A Case Report. *Cureus*. 2022 Feb 16;14(2):e22304.
8. Pandya KA, Radke F. Benign skin lesions: lipomas, epidermal inclusion cysts, muscle and nerve biopsies. *Surg Clin North Am*. 2009 Jun;89(3):677-87.
9. Kolb L, Yarrarapu SNS, Ameer MA, et al. Lipoma. [Updated 2022 Sep 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK507906/>
10. Lichon S, Khachemoune A. Clinical presentation, diagnostic approach, and treatment of hand lipomas: a review. *Acta Dermatovenerol Alp Pannonica Adriat*. 2018 Sep;27(3):137-139.
11. Aust MC, Spies M, Kall S, Jokuszies A, Gohritz A, Vogt P. Posttraumatic lipoma: fact or fiction? *Skinmed*. 2007 Nov-Dec;6(6):266-70
12. Signorini, Massimo M.D.; Campiglio, Gian Luca M.D., Ph.D. Posttraumatic Lipomas: Where Do They Really Come From?. *Plastic and Reconstructive Surgery* 101(3):p 699-705, March 1998.
13. Song T, Kuang S. Adipocyte dedifferentiation in health and diseases. *Clin Sci (Lond)*. 2019 Oct 30;133(20):2107-2119.
14. Erginöz E, Çavuş GH, Çarkman S. Post-traumatic chest wall lipoma in a violinist: fact or fiction? *Interact Cardiovasc Thorac Surg*. 2022 Feb 21;34(3):500-501.
15. Ntep, D. B. N., Bengondo, C., Kenna, E., & Menye, C. M. (2019). A Giant Oral Lipoma with Possible Post-Traumatic Origin: A Rare Entity at the University Teaching Hospital Center of Yaounde. *Oral health and dental management*. 18. 3. 10.35248/2247-2452.19.18.1061.
16. Paul SP. Biodynamic excisional skin tension lines for surgical excisions: untangling the science. *Ann R Coll Surg Engl*. 2018 Apr;100(4):330-337.
17. Park HY, Pongpudpunth M, Lee J, Yaar M. Biology of Melanocytes. In: Wolff K, Goldsmith LA, Katz SI, Gilchrist BA, Paller AS, Leffel DJ, editors. *Fitzpatrick's Dermatology in General Medicine*. McGraw Hill: New York; 2007. p.591-608.
18. Fitzpatrick TB. The validity and practicality of sun-reactive skin types I through VI. *Arch Dermatol*. 1988 Jun;124(6):869-71.