



## Dermatofibroma of the Glabella: A Case Study and Literature Review

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### Abstract

**Background:** Dermatofibromas are benign, non-cancerous skin growths that are usually the result of uncontrolled overgrowth of the fibrous histiocytes in the dermis. Some authors propose that dermatofibromas are distinct from benign fibrous histiocytomas, and others believe they are the same. We present a case of a dermatofibroma of the glabella with difficult cosmetic and R-0 resection results. A search of the medical literature resulted in few previously reported case of dermatofibroma of the Glabella. This article discusses the complex surgical approach in this location and reviews the medical literature.

**Keywords:** Glabella; Dermatofibroma; R0 resection; Fibrous histiocytoma

### Introduction

Dermatofibromas are small, firm, raised skin growths, which are in most cases painless, but occasionally become painful and itchy. Their coloration may be red, pink, purple, gray, or brown. Most often dermatofibromas appear on the lower legs but can also appear on the arms or trunk. The location of the dermatofibroma presented in this case creates a complex surgical approach because the glabella is such a unique anatomical area defined as the smooth area between and above the eyes. Only one previously reported case is found in the literature. Obtaining an acceptable cosmetic result with complete surgical excision in the glabella can prove very difficult as distortion of the eyebrows and scalp numbness are reported complications [1, 2, 3].

### Case Report

A 22-year-old Caucasian female presented complaining of a mass at the glabellar area for approximately two years. It had recently become enlarged, irregular, and painful. The patient was also very displeased cosmetically with the mass that was freely movable and irregular on physical exam without signs of pith, drainage or infection. The patient had seen her general practitioner who consulted a dermatologist 5 months prior for what was described as a small painless lump an angioliopoma. The dermatologist sent the patient for ultrasound which reported a 0.6 mm deep to the skin surface with a poorly-defined, round 5 mm lesion hypoechoic to subcutaneous fat suspicious for a complex cyst or solid lesion.

The patient was referred to Plastic Surgery for surgical treatment of the mass. After obtaining medical history and physical exam a treatment plan of wide local excision was discussed with the patient. Due to the prominence of the glabellar area, she was very concerned about the cosmetic result.

Using an elliptical incision with elevation encompassing the entire lesion grossly, a 1.4 cm x 1.4 cm x 1.0 cm mass was excised, labeled, and sent to pathology who reported the lesion was a dermatofibroma with microscopically positive margins superiorly.

The patient followed up with Plastic Surgeon postoperatively and was informed of the incomplete resection. The cosmetic difficulty of the glabellar area was again reiterated and reviewed with the patient. Plans for re-excision were arranged.

### Discussion

Dermatofibroma of the glabella is a very uncommon lesion. Dermatofibromas are usually found on the extremities, most commonly the lower leg. Jung et al. [4] in an article published the Annals of Dermatology in 2011, do not distinguish between dermatofibroma and benign fibrous histiocytoma. Dermatofibromas have fibrous proliferation in the mid to lower dermis just as benign fibrous histiocytomas. They also have acanthosis of the overlying epidermis with basal pigmentation. Dermatofibromas are usually confined to the dermis. The epidermis is then usually hyperplastic [5, 6].

Many authors such as Yamamoto et al. consider dermatofibroma and benign fibrous histiocytoma to be separate conditions and report differences in recurrence rates between them. Published in the Journal of Dermatology in 2005, they consider dermatofibroma to have a much lower recurrence rate than benign fibrous histiocytoma. Authors reporting these differences also describe that benign fibrous histiocytomas are much more common on the face than dermatofibroma, adding to this case's uniqueness. Lastly, it should be noted that some authors consider dermatofibroma to be a more superficial version of a benign fibrous histiocytoma, with a deep penetrating subtype being a benign fibrous histiocytoma of the skin.

Dermatofibromas have a very low recurrence rate of approximately 2%. However, recurrence rates can vary with the various types of dermatofibroma. The subtypes are: cellular, atypical, and aneurysmal. All three have recurrence rates significantly higher than 2%. In fact, the subcutaneous dermatofibroma can have recurrence rates as high as 15%. Dermatofibromas are also more common in women than in men. A male to female ratio regarding dermatofibroma is reported at 1:4. Age also plays a role, as the most common age group is 20-45 years old [9, 10].

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The glabella is the smooth area between the eyebrows, rising onto the forehead. Surgeries involving the glabella are known for their cosmetic difficulty, as the glabella is a highly visible area for the patient. Blake et al at Virginia Commonwealth University consider an ideal repair of the glabella to firstly limit the impairment of function and provide optimal cosmesis. In smaller wounds, primary closure is considered the standard of care and was performed in our case. Other ways of closing a defect of the glabella include healing by secondary intention, and either full or partial thickness skin graft. When dealing with a large glabella defect, surgeons should also consider using a rhomboid flap or an advancement flap, the latter of which is most commonly used in forehead reconstruction.

Cosmesis is very important to all patients, Fearmonti, Bond, et al. published scar scales recommending a systematic evaluation should also be done when discussing optimal cosmesis. They reported the basic ways to evaluate a scar include color, elevation, pliability, firmness, perfusion, and three-dimensional topography. Scar formation was very important for our 22-year-old woman and attempting to provide optimal cosmesis with complete excision proved difficult [11].

### Conclusion

This case demonstrated the cosmetic difficulty in fully excising a dermatofibroma of the glabella. Many factors made this case unique, including the location, microscopically involved margins, and cosmesis goals. Clinicians need to be aware of the important balance between cosmesis and complete excision and have open communication with their patient discussing their cosmetic desires, while also stressing a complete resection for a positive medical outcome for the patient.

### Addendum

Pathology report came back as this report was written stating incomplete resection and the patient underwent reexcision. The second

second pathology report reported narrowly but completely excised mass. Patient has been seen in the office post operatively in December 2018 and no obvious scar is appreciated. Please see attached figures for histology review [Figure 1].

### Declarations

Authors' contributions: Robert DeVito has performed literature search and designed the case report. Ali Kimyaghalam has edited the case report and made the case report finalized. Dr. Generalovich supervised the entire process.

### Availability of data and materials

Pubmed and medline search tools. Unfortunately, patient refused preop and post op pictures. Histology pictures were obtained from the pathology department.

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### Conflicts of interest

All authors mentioned above have no conflicts of interest in this publication.

### Ethical approval and consent to participate

Patient's consent to participate in this article is kept at the surgeon's office. She gave consent to the article including the histology pictures; however, she refused to give consent for preop and post op pictures.

### Consent for publication

Available at request

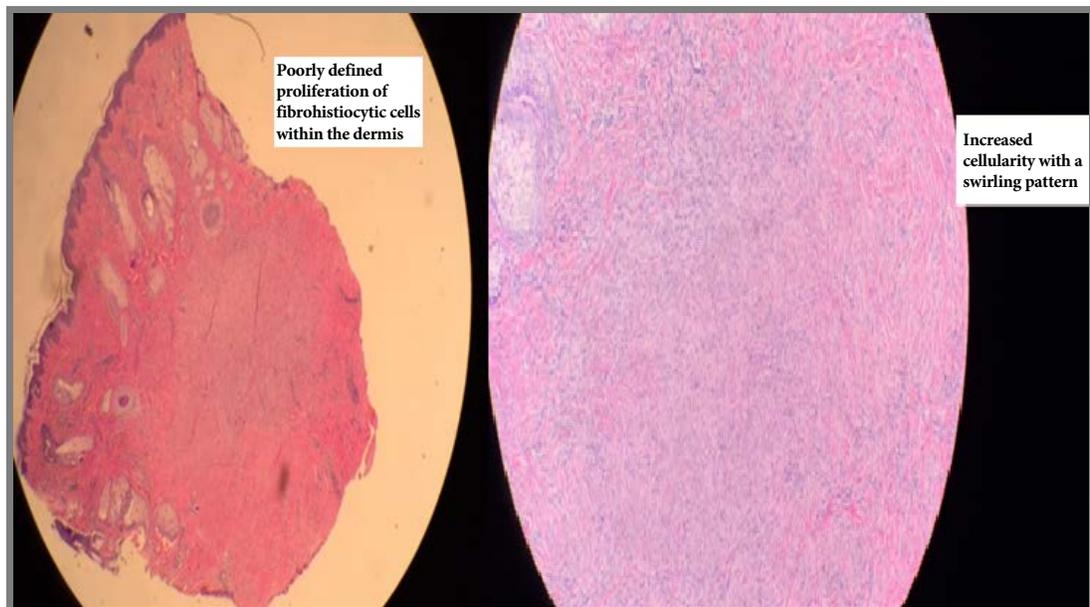


Figure 1: Histological pictures of the excised lesion.

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