

## Case Report

# Bilaterally occurring lipogranuloma affecting the periorbital regions

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### ABSTRACT

Lipogranulomas are the result of an uncommon inflammatory reaction occurring in the dermis due to exogenous or endogenous lipids. Lipogranulomas present as asymptomatic swellings usually at the site of trauma or medical intervention.

**Keywords:** Lipogranuloma, Orbit, Exogenous, Endogenous lipids

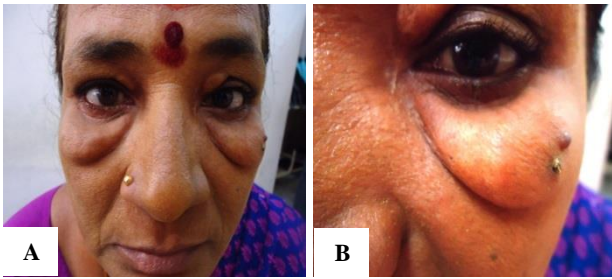
### INTRODUCTION

Lipogranuloma also referred to as lipid granuloma, oleogranuloma or paraffinoma, is an uncommon granulomatous inflammatory reactive process to exogenous or endogenous lipids.<sup>1</sup> It rarely occurs over the face, with only a few cases being reported in the orbital and periorbital regions. Here we report a case of idiopathic lipogranuloma occurring below bilateral lower eyelids in a middle aged woman.

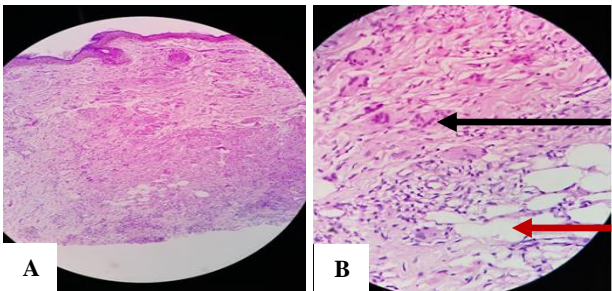
### CASE REPORT

A 41 year old female came to the dermatology OPD with complaints of painless masses below both eyes for 2 years duration. It initially started as a small firm swelling below bilateral lower eyelids not associated with pain or itching. It gradually increased in size until about a year ago, when she noticed acceleration in growth and change in consistency, becoming softer and fluctuant. Patient also had similar painless swellings over her upper eyelids which had appeared around the same time, but did not show any striking changes in size. She had consulted a physician one year ago for the same problem and she was

found to have dyslipidaemia for which she is on treatment with statins. She had no other co-morbidities. She had undergone dacryo-cystectomy of the left lacrimal apparatus a year ago. On examination, a poorly circumscribed swelling of size 2×4 cm was noted arising below both lower eyelids. Skin over the lesion appeared normal. On palpation the swelling was non tender and soft in consistency. The lesion had a lobulated feel, with a few areas having a slightly firm consistency which was felt on deep palpation. She also had well circumscribed yellowish plaques on bilateral upper eyelids adjacent to the inner canthi suggestive of xanthelasma palpebrarum. A punch biopsy was taken from the lesion below the left eye. Histopathological examination revealed epidermal atrophy and the presence of granulomatous lesions in the deep dermis composed of multinucleated giant cells, vacuolated cells, lymphocytes and histiocytes suggestive of a lipogranuloma. Ophthalmologist opinion was sought to rule out any involvement of the periorbital fat with possible ocular implications. She was found to have normal range of ocular movements and no disturbance in vision. Surgeon opinion was sought and she was advised to undergo complete excision of the lesion. Patient was unwilling for surgical correction.



**Figure 1 (A and B): Clinical picture showing a poorly circumscribed swelling of size 2×4 cm was noted arising below both lower eyelids. Note the nodular appearance on the left tumour.**



**Figure 2 (A and B): Histopathology shows thinned out epidermis and granulomatous lesion composed of multinucleated giant cells (black arrows), vacuolated cells (red arrow), lymphocytes and histiocytes in the deep dermis.**

## DISCUSSION

Lipogranuloma or sclerosing lipogranuloma is an uncommon granulomatous tissue reaction to exogenously administered foreign body or endogenous lipids. Based on the causative factor, the condition can be classified into a primary type, caused due to endogenous lipid degeneration and a secondary type due to exogenously injected substances like paraffin, wax, oil or silicone.<sup>2,3</sup> Apart from this, systemic lipogranulomatosis have also known to occur secondary to systemic metabolic derangements like lipid metabolism disorders, nephritic syndrome, diabetes mellitus etc. due to lipid aggregations within tissues.<sup>4</sup> A case of lipogranuloma of the breast was reported in a patient with SLE.<sup>5</sup> Heat, cold and trauma can cause endogenous fat degeneration and precipitate lipogranuloma formation, such lesions have been known to occur over the scrotum in men.<sup>6</sup> Subcutaneous injection of liquid silicone or oil like substances for penile augmentation<sup>7</sup> and silicone breast implants are the commonest causes for lipogranulomas occurring in these areas in men and women respectively.<sup>4</sup> Facial lipogranulomas have been reported in patients who underwent cosmetic procedures like autologous fat injections.<sup>8</sup> Orbital or periorbital lipogranulomas are very rare and can present as painless subcutaneous masses, proptosis or eyelid swelling and can be caused due to periocular ointment application, vitrectomy and subtenon steroid injections.<sup>9-11</sup> Allergic responses and T cell

mediated immune responses are the probable mechanism responsible for the formation of lipogranulomas.

Histopathological features of lipogranulomas include multiple fat vacuoles often embedded within a sclerotic stroma accompanied by granulomatous inflammation composed of multinucleated giant cells (can be Langhan giant cells or foreign body giant cells), histiocytes and epithelioid cells. These granulomas may exhibit gradual enlargement and encapsulation which contributes to the multi-lobulated appearance on clinical examination, mimicking malignancy. Complete resection and debulking surgeries are the preferred modes of management.

## CONCLUSION

Lipogranulomas are known to develop months to years after surgical procedures at same or distant sites. Understanding the patients' clinical and histological findings is crucial in making an accurate diagnosis. This case is reported for its rarity.

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