

Correction of tear troughs and concealing of undereye orbital fat pads with filler – A case report

Abstract

Background – Under eye tear troughs are not only associated with periorbital volume loss but also display bulging of orbital fat. The main concern of many patients is correction of this bulged out orbital fat pad without undergoing surgery. Efficacy of hyaluronic acid fillers has been proven successfully in correction of periorbital volume loss but no reports have been published in concealing of orbital fat pads.

Objective – To assess the effectiveness and safety of Hyaluronic acid filler in treatment and correction of tear troughs and concealing of undereye orbital fat pads.

Method – A 43 year old female presented with grade 3 tear troughs and bulged out orbital fat pad underwent a single treatment session with 1ml Juvederm Volbella® filler (Allergan Inc, Irvine Cal) with 30Gx8mm needle. Assessment of periorbital area was done immediately after the procedure and after 3 days.

Results – Hyaluronic acid filler injection not only showed significant improvement in periorbital hollowness but also concealed the bulge of orbital fat pads remarkably.

Conclusion – Hyaluronic acid filler not only corrects tear troughs but is also an excellent alternative to surgery for concealing of under eye orbital fat pads without any formation of lumps and irregularity.

Keywords – Tear trough, undereye orbital fat pad, hyaluronic acid filler

Case study

Introduction

Tear trough deformity is a sunken appearance and depression of the lower eyelid region which is inferior to pseudo herniated eye bags. ^(1,2) These eye bags are due to prominence of orbital fat which increases with growing age. Protrusion of under eye orbital fat pads can be due to weakness of septum or due to volume loss of cheeks and subcutaneous periorbital skin. ⁽³⁾ This gives the patient a sunken and fatigued appearance. ^(4,5) Various treatment options are available for correction of teartrough deformity along with bulged out orbital fat pads including fat grafting, lower lid blepharoplasty combined with fat repositioning and fillers. ⁽¹⁾ Fillers are an excellent non surgical treatment option for the same.

Hyaluronic acid dermal fillers are widely used to treat loss of volume in the infraorbital region. ^(6,7) It is imperative to select the right quality of filler depending on its viscosity and flow characteristics. ^(8,9,10) Juvederm Volbella® filler (Allergan Inc, Irvine Cal) has excellent

mouldability and distributes evenly within in the tissue. There is also decreased swelling of gel when injected in the tissue hence concealing the periorbital hollowness surrounding the bulge of orbital fat pads with a smooth finish. ^(11,12) However we are aware about the limitation of the procedure, that it will lead to only partial concealing of the eye bags and not complete removal.

There have been a lot of reports on hyaluronic acid fillers in treatment of infraorbital hollowness but to the best of our knowledge no case has been reported on use of fillers in concealing bulged out orbital fat pads.

We present here the first ever case reported on treatment of periorbital hollowness along with bulged out orbital fat pads with Juvederm Volbella® (Allergan Inc, Irvine Cal) hyaluronic acid filler without the use of any other treatment modality.

Case Report

A 43 year old female presented with sunken appearance of the eyes, under eye hollowness and complained of puffiness under her eyes which made her look tired. In a study done by Jindou Jiang et al, patients tear troughs were classified in three classes based on volume loss, orbital fat herniation and excess of lower eye lid skin. Our patient had grade 3 teartroughs with significant periorbital hollowness and bulged out orbital fat pads with circumferential depression along the orbital rim. ⁽¹⁾

She complained of worsening of the under eye troughs and bulged out orbital fat pads since the last two years. There was no medical history of acute or chronic illness. These under eye tear troughs with bulged out fat pads gave the patient a very tired appearance and people often asked her if she was stressed or slept inadequately. She often tried to cover them up with makeup but the deep troughs and the eye bags under her eyes could not be concealed.

Patient was not keen on undergoing a surgery and was looking for non surgical treatment of the eye bags and the troughs. We educated her about filler as an option of treatment and counselled about its limitations in completely eradicating the eye bags and informed her about its role in partial concealment of the same. She was convinced for the treatment and we decided to inject Juvederm Volbella® filler (Allergan Inc, Irvine Cal) for instant rejuvenation of her under eye area without any side effects.

Patient was made to sit on a chair with head rest. After removing her makeup, a local anaesthesia cream (2% lignocaine) was applied in the area to be treated 45 minutes prior to the procedure. The area was then disinfected with chlorhexidine solution and sterile gloves were used to perform the procedure. The infraorbital rim was located and marked to prevent insertion of needle in the orbit. The infraorbital foramen was also palpated and marked as a no go zone to prevent injection in the infra orbital artery.

1ml Juvederm Volbella® filler (Allergan Inc, Irvine Cal) was injected with 30 guage x8mm needle. The material was injected in multiple passes at the supraperiosteal level and in the deep dermal plane (two bevel deep) with microbolus technique. In between the procedure the area injected was inspected and lightly massaged to disperse the filler evenly and to avoid

irregularities (lumps and bumps). Forceful compression was avoided to prevent migration of the filler in the orbital fat pad above and in the cheek below. ⁽¹³⁾ The amount of filler injected each side was 0.5 ml.

Significant results were seen immediately after the procedure and the tear troughs and orbital fat pads were concealed visibly. No complication of infection, bruises and pain occurred but mild erythema and swelling developed which weaned off in three days.

Patient was instructed not to massage the area to avoid dispersal of the product and was called back after one week. Patient was also told to visit the clinic if any irregularities are seen as the material can be massaged and reshaped with ease for several weeks after the procedure, but it is best to be done under an expert guidance. ⁽¹³⁾

Discussion

Tear trough depression is a concave shaped deformity of the orbital fat pad which develops due to genetic differences in anatomy and ageing. ⁽¹⁾ It is hollowness and depression of the lower eyelid region located inferiorly to the pseudoherniated eye bags.

A study done by Robert Alan Goldberg et al ⁽³⁾ showed that there are a number of anatomic changes which contribute to formation of eyelid bags. The most common anatomic concerns which lead to eyelid bags are tear trough deformity, under eye orbital fat pads and decreased skin elasticity. These changes become more prominent with increasing age.

Tear trough depressions are formed due to loss of subcutaneous fat, weakening of orbital retaining ligaments, thinning of the skin along with descent of the cheek. However it can also be associated with congenital hypoplasia or age related changes of the underlying bony structure.

Orbital fat pads are formed due to weakening of orbital septum, loss of cheek volume and laxity of periorbital skin causing protrusion of orbital fat pads. They can be easily distinguished from eyelid fluid by their prominence in upgaze.

Hence it is really important to understand that formation of tear troughs and orbital fat pads are interrelated with each other and there are various overlapping factors which contribute in causing both.

Volbella® filler (Allergan Inc, Irvine Cal) contains 15mg/ml of hyaluronic acid and belongs to Vycross range of fillers. ⁽¹⁴⁾ It is an excellent filler for correction of tear troughs specifically because even if this filler is placed superficially it does not cause tyndall effect. ⁽¹⁵⁾ As this filler has low cohesivity, good spreadibility and malleability it leads to minimal gel swelling, a side effect which is commonly seen with other fillers.

Conclusion

Hyaluronic acid filler is an effective treatment for the correction and concealing of under eye bags or orbital fat pads and a good alternate method to surgery without any side effects and

downtime. Filler material which has good spreadability, mouldability and has low viscosity significantly reduces the appearance of eye bags without any formation of lumps and irregularities. Under eye teartroughs or periorbital hollowness is a widely treated indication by hyaluronic acid fillers but concealing of periorbital fat pads is an indication which is not explored widely and must be done considering the ease with which they are corrected.



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