



## BOTOX (BOTULINUM TOXIN) FOR GUMMY SMILE- CASE REPORT

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### ABSTRACT

A case is described where a patient complaining of a gummy smile is treated with Botox to reduce hypermobility of upper lip. Whilst the initial result caused the patient some concern. 3 months after the initial procedure the patient was delighted with the results obtained. The results are completely reversible so 6 months after the initial treatment the patient had reverted back to the original situation

**KEYWORDS :** Botox ,Gummy Smile

### INTRODUCTION

As a society becomes more aesthetically conscious, aestheticians are more challenged to produce aesthetic smile. Amongst all the human facial expressions of pleasure, happiness, amusement or derision & it is likely the most complex in terms of meaning & few needs adjustment to get an immaculate smile which is appealing & dynamic. [1]

Aesthetically pleasing smile is influenced by three factors -

- Lips
- Teeth
- Gums

### Botulinum toxin

synthesized by *C. botulinum*, *C. butyricum*, and *C. baratii*, all of which are anaerobic spore forming bacilli. The spores are heat resistant, and they can germinate to produce toxin in the appropriate environment of anaerobic conditions, low acidity, and liquid medium, as found in some foods. The toxin is ingested and absorbed through the gastrointestinal tract into the systemic circulation [2]

The action of Botulinum toxin at the neuromuscular junction is to interrupt transmission and in effect to denervate muscle. This chemodenervation effect persists for weeks to months. [3] The duration of effect may depend on serotype. The mechanism for this extended duration has been hypothesized to arise from either continued protease activity within the cell or from persistent interference by cleaved substrate with normal membrane fusion. [4]

### Gummy Smile.

When an excess of gingiva superior to the maxillary anterior teeth is displayed upon full smile, it is termed a gingival smile. The gingival smile is known by a variety of terms including—gummy smile, high lip line, short upper lip, and full denture smile. Perhaps this variety in terms is indicative of the many different causes of a gummy smile. [5] The smile itself and the aesthetics of the smile are influenced by 3 components: teeth, gums, and lips. An attractive smile depends on the proper proportion and arrangement of these 3 elements. The upper lip should symmetrically expose up to 3 mm of the gum and the gum line must follow the contour of the upper lip. [6] The exposure of more than 3 mm of the gum during the smile is known as gingival or gummy smile.

Gummy smiles range from mild, moderate, and advanced, to severe. Rosemarie Mazzucco et al., classified gummy smile into anterior, posterior, mixed, or asymmetric, based on the excessive contraction of muscles involved.

Goldstein classified the smile line (consisting of the lower edge of the upper lip during the smile) according to the degree

of exposure of the teeth and gums into 3 types: high, medium, or low. [7]

### Causes Of A Gummy Smile -

- Pre-Treatment
- Sex Predisposition
- Musculature and Lip Incompetence
- Altered Passive Eruption
- Unexpressed Vertical Growth
- Extrusive Forces
- Anterior-Posterior Position of the Maxilla

### Case report:

A male patient aged 25 years comes with the chief complaint of gum exposure "Gummy smile" during smiling. He presented with a class I incisor relationship on a class I skeletal base. With incompetent lips & there was a normal lip line with 6mm incisor show at rest about 9mm of gums are exposed during the smiling.

### Treatment plan:

with all the possible treatment plan options for the gummy smile that are -

- Surgical crown lengthening & veneers to reduce the gingival show
- Le-fort I osteotomy with anterior & posterior maxillary impaction to reduce the excessive maxillary show on wide smiling
- Administration of Botox to reduce upper lip hypermobility to reduce the excessive gingival show.

The three treatment options were discussed with patient, out of 3 options patient is agree with less invasive treatment for aesthetic improvement.

### Treatment progress

The 50U Botox powder was supplied pre mixed with 2ml of saline. Botox was injected in small increments following aspiration into the upper circumoral musculature with the aim of effecting Levator labii superioris & zygomaticus muscle areas, in an effort to reduce the patient's upper lip hypermobility.

### Post-operative period:

the patient presented a week after botox injections he said botox had started to take effect after a couple of days and now he is ok with his smile. patient was kept under regular reviews & this results persists for at least 6 months.

### DISCUSSION:

Botox has been widely used in dentistry for the treatment of hyper-functional facial lines, temporomandibular disorders, masseteric hypertrophy, hemifacial spasms, myofascial pain

& bruxism.[8] In this case report Botox has been used for the treatment of hypermobile upper lip as a simple & minimally invasive correction method of gummy smile . one major advantage of this approach to treatment was that it was 100% reversible so if there is any aspect of appearance change about which the patient is unhappy they can be reassured that the effect is temporary.[9]

For some patients with the unaesthetic smiles patients due to over retraction of the upper lip but with no obvious malocclusion that needs correcting, Botox may provide a medium term solution provided they are willing to undergo repeated injections every 6 months .[10]

#### CONCLUSIONS:

Injection with botox provides effective , minimally invasive , temporary treatment of gummy smile for patients with hypermobile upper lip.which can be repeated if the patients like the aesthetic improvement achieved.



pre-operative pic



post operative dark spots in pic showing area of injection

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