

## Treating a Cleft Chin

Dr Gabriel Siquier Dameto discusses the attractiveness, characteristics and various treatment methods for a cleft chin

### What is a cleft chin?

A cleft chin refers to a chin with a Y-shaped dimple in the middle.<sup>1</sup> It's usually a dominant genetic trait. Cleft chins form during embryological development and are caused by one of the following issues; either the mandibular processes have not fused properly at the level of the mandibular symphysis which created an indentation,<sup>2</sup> or the chin muscles, known as the mentalis muscles, on both sides of the dimple are further apart than normal, effectively pulling in the skin around the chin area.

In the vast majority of instances, chin clefting is caused by how the mentalis muscles are situated. The mentalis is a paired central muscle of the lower lip, situated at the tip of the chin. It originates from the mentum and inserts into the chin soft tissue. The mentalis is located in the triangular space that delimits the depressor muscle of the lower lip on both sides of the midline; between the upper part of the symphysis and the mental eminence. It is even, small and conoid. The mentalis is inserted on the upper part in the lower maxilla below the incisive eminences and the canine, below the gums; and in the lower part, at the skin of the chin.<sup>3</sup>

In the case of a cleft chin, there is either a wide space between the two mentalis muscles or they are particularly large, creating a 'valley' of sorts between them.

### Attractiveness of a cleft chin

Cleft chins are often considered a sign of attractiveness and beauty, as well as a sign of power. In Persian literature, the chin dimple is metaphorically referred to as 'the chin pit' or 'the chin well'; a well in which the poor lover is fallen and trapped.<sup>4</sup> But the appreciation of beauty is, most of the time, dependent on personal preferences and fashion. As such, there are individuals

who don't like the cleft chin as it can be seen as a rude feature in men or as a masculinising feature in women; in this way a cleft chin can sometimes be referred to as a 'butt chin' with derogatory connotations.

### Differences in cleft chins between men and women

There are some differences regarding how the cleft chin presents in men and women. Generally, the dimple in men is deeper and wider, forming vertical and Y-shaped furrows. In women however, the dimple commonly appears less deep, softer and centered, forming round dimples. This is due to the fact that usually the inferior maxilla of a women is smaller than in men.

### Treatment methods

Before performing a treatment to enhance or to remove a cleft chin it is important to consider the risks associated with the treatment, to be explained hereafter. Different treatment options are offered, largely depending on whether the patient wants to have a temporary or permanent result. Temporary results can be achieved with various fillers and injectables, if the patient is willing to undergo surgical options then the result will of course be permanent. This article will focus on removing the cleft chin rather than enhancing, which is a less popular treatment, usually to help with the appearance of ageing.

### Chin fillers

The easiest and most direct way to remove a cleft chin is simply by placing hyaluronic acid (HA) filler into the chin area. HA fillers can be injected directly into the dimple, effectively raising the skin in the dimple area to bring it into proportion with the rest of the chin. To achieve this lifting effect and to replenish the deficit of tissue volume in the chin, a high viscosity filler must be used. This will guarantee a longer lasting result and enough lifting capacity.

The HA filler is injected with a needle directly onto the maxillary bone where the dimple is located. Filler must be injected with the bolus technique. I would recommend practitioners inject 0.1 ml while counting to ten, this is mainly to avoid complications as slow injections

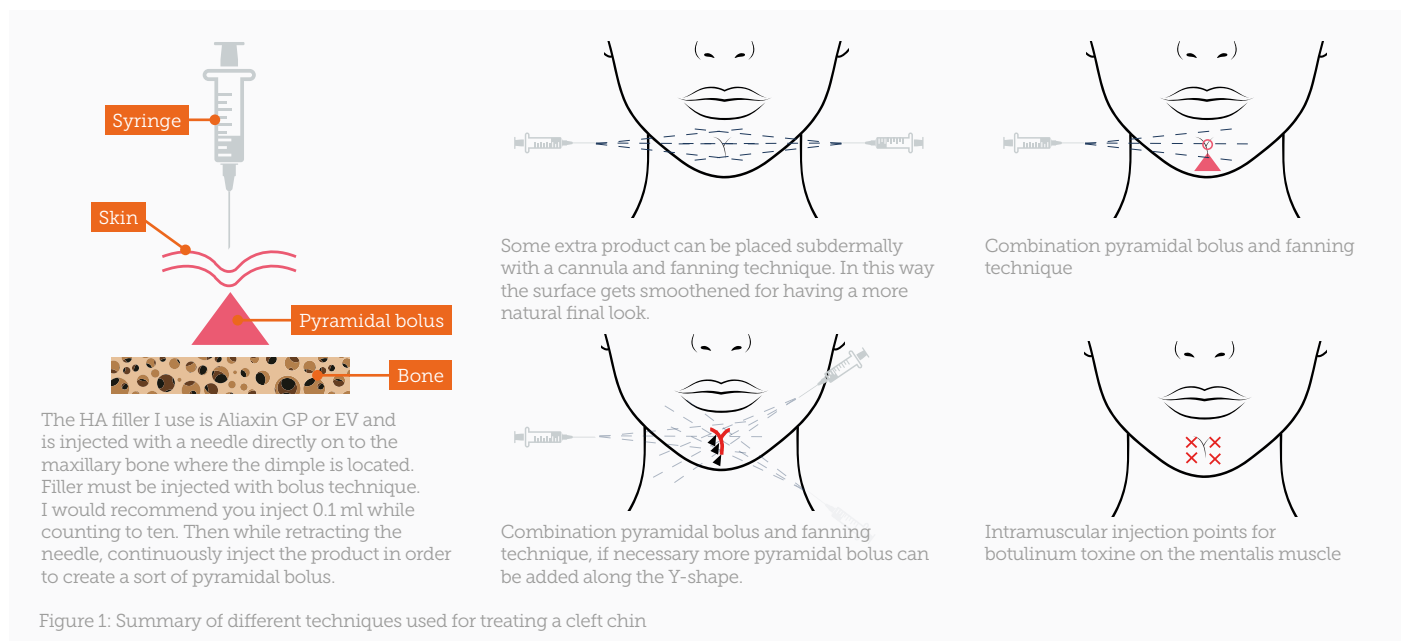




Figure 2: Images demonstrate before and six months after a cleft chin treatment using Aliaxin EV.

and small boluses tend to be safer. Then, while retracting the needle, continuously inject the product in order to create a sort of pyramidal bolus. Two further injections can be administered to the lower corner of the mandible at a 1cm distance from the medial facial line to lengthen the face or visually expand the chin.<sup>5</sup> The insertion point is at the lower jaw corner directly inferior to the corner of the mouth. If necessary, some extra product can be placed subdermally with a cannula and fanning technique. In this way, the surface is smoothened to achieve a more natural final look. The quantity of product normally needed for a cleft chin treatment can vary between 1 to 3ml of HA filler. Sometimes, if the dimple is very deep, or in case of mentalis hyperactivity, I believe it is better to conduct the treatment in two sessions with a one month interval. In clinic, I prefer to do a dosage control of botulinum toxin, which I go on to discuss in more detail below, after one month to see if a top up is even necessary. It also helps to monitor any swelling or complications.

Although HA fillers are a quick and generally safe option, the results will not be permanent and the effects will last for around 12 months. It is wise to advise the patient to have a top-up session every eight months in order to achieve continuous results.

### Botulinum toxin injections

Botulinum toxin is a purified toxin that blocks the nerve signals from the brain to the muscle;<sup>6</sup> this results in the relaxation of the muscles. As previously mentioned the cleft chin can be formed because of the depression between the two mentalis muscles and botulinum toxin can paralyse these muscles, consequently reducing the appearance of the cleft. The effects of botulinum toxin, however, only last for around three to six months depending on the individual and it will not have the filling capacity. On the other hand however, it is a good ally to complement the HA filler treatment.

### Surgical options

There are also other options to treat the cleft chin such as fat grafting or surgery. These treatments can have a longer lasting effect but they also need more recovery time and they can have more serious complications such as infection, excessive bleeding, scarring, swelling or undesirable results. When performing fat grafting it has to be considered that the size of the chin will be increased and some patients will not be happy with this new appearance. Surgical solutions to correct a cleft chin can involve chin implants, modifying the chin bone itself and addressing the placement of the mentalis muscles, or a combination of these last two options.

Whichever treatment the patient may choose, surgical or non-surgical, it is important to keep in mind that it is nearly impossible to reverse a particularly prominent cleft chin by only one type of treatment.

Personally, my preferred treatment is a combination of HA filler with botulinum toxin. In my opinion this is less invasive, with reduced or no downtime for the patient and immediate results.

### Preventing complications

As with all kinds of filler treatments, understanding and respecting the anatomy of the treated area is very important. Early and late complications with varying levels of severity otherwise may otherwise occur. For example, an intravascular injection can cause the development of local skin necrosis, a massive microcirculatory embolism and/or external compression of the chin skin microvasculature. Another complication recently published is a vascular compromise in the tongue.<sup>7</sup> This occurred after chin augmentation with HA. The filler was possibly injected into the sub-mental artery or its branches, which then was most likely to have travelled to the deep lingual artery, before causing the vascular compromise.

In the case of suspecting a sign or presence of vascular compromise, hyaluronidase must be injected immediately to the treated area and the compromised area. To avoid vascular events, my professional opinion is that injection techniques such as use of a blunt cannula, slow injection, low-pressure injection, moving the needle while injecting, and use of a small bolus per injection should be applied.

### Conclusion

Although more permanent results for treating the cleft chin can be achieved through surgical options, I believe that a combination treatment of HA filler and botulinum toxin will have a much more positive, less invasive approach. I think it is also important to make patients aware that cleft chins are often perceived as a sign of beauty throughout the world, which is another reason to recommend filler treatments as they don't last forever. Every aspect of the treatment should be discussed in the consultation to ensure the patient is suitable, it may also be worthwhile to carry out a body dysmorphic disorder (BDD) test if you are initially concerned. Possible complications that could occur should also be discussed.



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