

Indication Specific Cannula Treatment

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Abstract

Blunt-tip cannulas have been developed for the use with dermal fillers. They can help to improve the way dermal fillers are injected as they do –generally spoken- enable for a less traumatic injection of the material as well as a very aesthetically appealing result. There is a lot of discussion on whether to use a blunt tip cannula or a hypodermic needle generally. Obviously, there is no one way to inject fillers: any injection equipment –and this does relate to cannulas and needles, too- should be used individually and in an indication-specific way. The objective of this article is to give some guidelines on why and how the use of cannulas does make sense.

Keywords: Cannula; Needle; Filler; Extrusion force; Indication-specific filler treatment

Introduction

Filler injections are some of the most popular procedures performed in aesthetics. Since 1980 when fillers were first used, most injections have been done with needles. Doing filler treatments and teaching on injectable since more than 15 years now, I can state, that injectors do take more care about how they inject fillers as it is obvious that applying advanced techniques using better or/and specific equipment do end up in better aesthetic overall results: More precise and elegant techniques as well as using appropriate equipment according to the individual indication will increase the quality of the overall aesthetic outcome and will reduce injection-related side effects such as such as pain, swelling, bruising, irregularities, overcorrection etc.

Cannula or Needle?

There is no straightforward answer to this question. The reason why one would ask this question is as obviously, those two injection tools enable for different filler treatment strategies. Looking at two main aspects in injecting fillers, the overall goal is to produce as few overall but certainly injection-related side effects as possible.

There is a lot of scientific as well as clinical evidence that the use of blunt tip cannulas does facilitate filler injections [1,2]. When blunt-tip cannulas were introduced, they were designed to eliminate possible complications associated with the use of traditional sharp tip hypodermic needle. By making the tip end "blunt" with injection port on the side of the cannula instead of at the tip and the whole cannula long and flexible, several advantages over traditional hypodermic needle came into play: It's length and flexibility allow for covering a larger targeted area.

This means that typically, less injection points are required to achieve optimal results. Secondly, those cannulas glide more softly and easily through the sub-Q- layer rather than cutting through tissues and vessels like the traditional hypodermic needle could do. With less damage combined with improved maneuverability, filler injection with Blunt-tip Micro Cannula are performed much quick and with less pain [1-4].

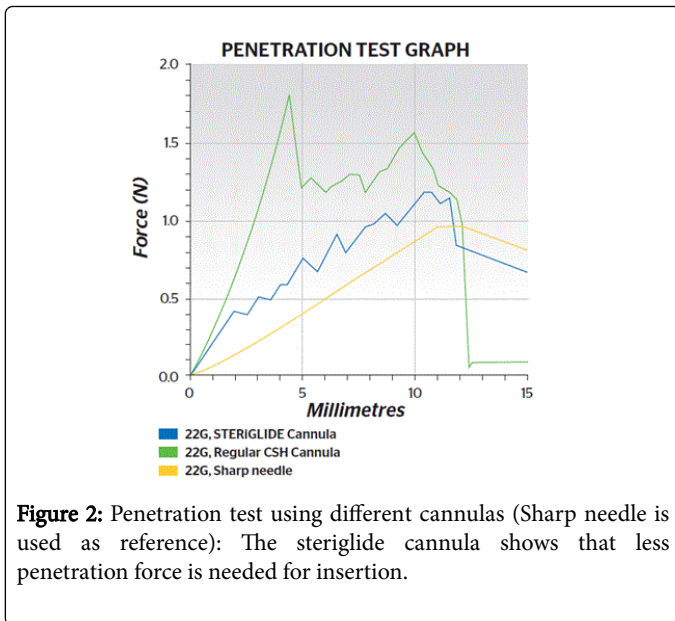
The use of blunt cannulas results in less bruising, swelling and pain with faster recovery [2]. But cannulas certainly can't always be the right equipment as they wouldn't be suited for all indications such as e.g. intradermal injections obviously (Figure 1).



Figure 1: Left: Steriglide cannula 25 gauge; Right: Sharp needle 25 Gauge (©Sabine Zenker, TSK Laboratories).

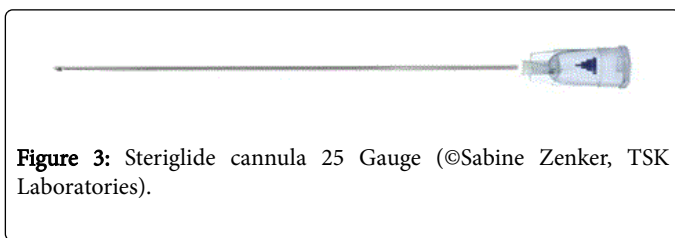
Cannula Features

Given the fact, that a physician uses cannulas, one should understand important features of those little auxiliary tools: The insertion- and or penetration force, as well as the gliding capacity, do very much depend on their manufacturing process: a silicone coating as well as the shape of the tip of the cannula itself has a remarkable positive impact on the ease of insertion, sliding through the anatomical layers as well on its manoeuvrability (Figure 2).



Additionally, the wall design has a great impact on the extrusion force of the filler material: a thinner wall gives more way for the product, does reduce extrusion force for the filler and therefore does increase the ease of injection. Especially in sensitive areas such as e.g. the periorbital area (one should think of the Palpebral Line) a smaller overall diameter of a cannula is beneficial.

A hub-marking enables the injector to allocate the location of the whole during injection (Figure 3). Additionally and ideally, manufacturers can provide the hole at the very end, respectively very close to the tip of the cannula (Figure 3), which ensures the precise placement of the filler as the materials exits the cannula directly instead of “making a bow”.

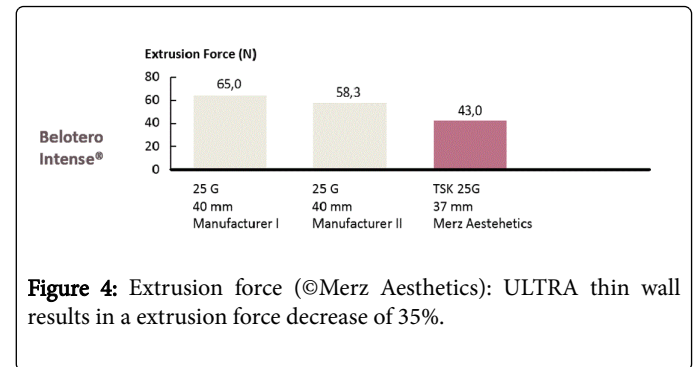


Indication Specific Cannula Technique

Prior to any treatment, the indication has to be set. Injection techniques as well as their equipment such as the filler material itself, as well the use of injection equipment such as cannulas, needles, injection systems etc. have to be planned and applied in an indication-specific way. This means, that they should be used according to each indication individually and in a specific way.

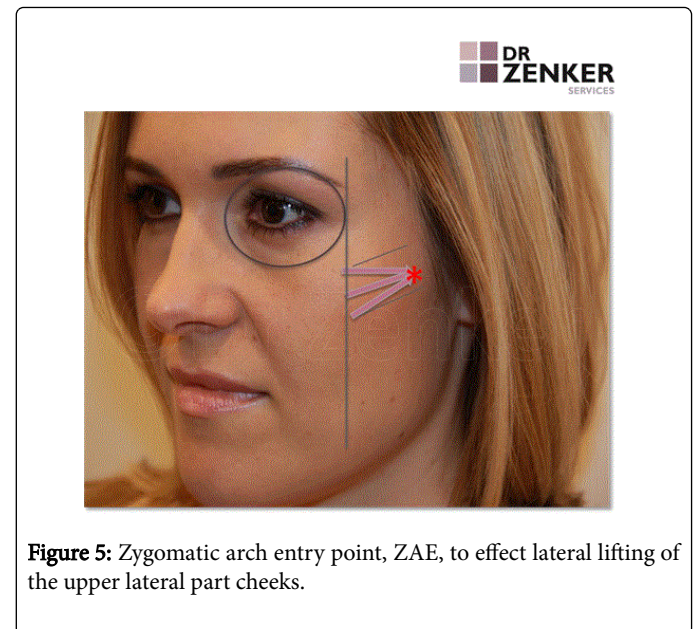
Looking at one specific indication now, the sagged lateral upper part of the cheeks, in my hands, using a blunt tip cannula is preferable. It’s not only about the above-mentioned overall advantages as we reduce side effects such as e.g. less risk of bruising due to e.g. reduced number of entry points and increase the overall aesthetic outcome. There are specific aspects of evaluating and reflecting on in this exemplary case of the indication sagged lateral upper part cheeks:

To effect a smooth, regular and effective lateral lift in this area of the upper cheek, one has to place the filler on a “long” distance (compared e.g. with another, opposed indication such as the sunken corners of the mouth where the use of a cannula does not really make sense). For this indication, the use of a blunt tip cannula is elegant, as the filler material can be applied in continuous threads, even while crossing different anatomical layers based on ONLY ONE entry point, the Zygomatic Arch Entry point, ZAE (Figure 4): This technique enables to cover a greater area in a single treatment.



My Technique Sagged Lateral Upper Part Cheeks

The length of the blunt cannula I do choose does depend on various parameters: its length is chosen according to the distance of the area to be filled. It typically varies from 1½ to 2 inches; gauge depends on the filler requirements, basically, 22-27 G cannulas can be used, the most common size might be the 25 G. The entry point in this case to effect the lateral lifting is the Zygomatic Arch Entry point ZAE (Figure 4).



The linear threading technique in a retrograde fashion will be used in a fan-shaped pattern, covering the whole area of volume depletion by managing the injection from this one entry point only.

The filler placement has to be subperiosteally as more medial the placement will be and ends up in the subdermal plane over the zygoma

area. The volume injected per thread might be approximately. 0.1-0.2 cubic centimeters (cc) per thread.

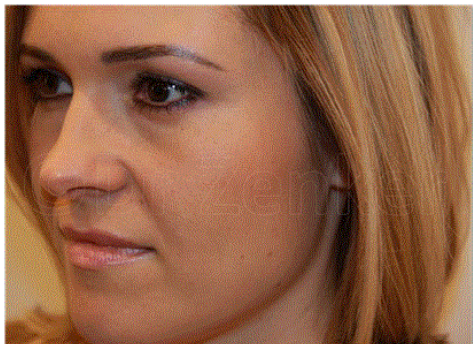


Figure 6: Lateral lifting of the upper lateral part cheeks –Left side before treatment.



Figure 7: Lateral lifting of the upper lateral part cheeks –Left side immediately after treatment.



Figure 8: Lateral lifting of the upper lateral part cheeks –Right side before treatment.

The goal is to only correct up to the clinical endpoint and not to overcorrect. Gentle molding after injection is ideal.



Figure 9: Lateral lifting of the upper lateral part cheeks –Right side immediately after treatment.

The clinical result, notably the reshaping and lifting of the lateral upper part of the cheeks is illustrated by Figures 5-9.

Conclusion

The blunt tip cannula provides a great number of advantages and is an impressive alternative to the use sharp-tipped needles for certain filler injections. Although the usage of one injection equipment over the other really boils down to the medical professional's preference, the benefits of using cannulas to both, the patient and the medical provider, cannot be ignored.

But looking at how to make the right choice between needle and cannula a bit more objectively, the evaluation of the following aspects might help: Which is the indication to be treated in terms of its anatomical length and form as certainly the ogee curve is ideally suited to be re-built by using a cannula.

Can one reduce the number of entry points as already one entry with the cannula can fill a far larger area than this would be possible with a sharp tip needle. And finally, how can we improve the overall procedure for our patients as they will benefit from a cannula treatment which will be shorter in length and lower in pain, discomfort, and trauma associated with it. So using blunt-tip cannulas to inject fillers is very elegant and preferable equipment in specific indications such as e.g. the lifting of the sagged lateral upper part of the cheeks.

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