

A simple and cheap system to speed up and to control the tumescent technique procedure: the Tedde's system

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Abstract. – We have devised a low cost system to quickly infiltrate tumescent solution: we call it the “Tedde’s system”. This low-cost system offers an improvement in quality and quantity of the infiltration because all the procedure depends on the operators, reducing also the time of the infiltration and consequently of the whole surgical procedure. Moreover, this system can be applied to other surgical procedure that requires large infiltration volumes.

Key Words:

Differentially expressed miRNAs, Colorectal cancer detection, Meta-analysis.

Short Report

Nowadays, liposuction and fat grafting have become an office-based routine procedures¹.

The tumescent technique is a safe procedure with a low complication rate, making comfortable most of the office surgery procedures to the patient. The main advantages of the tumescent infiltration are a low intra- and post-operative blood loss, and a prolonged postoperative local analgesia. Moreover, the fat tissue is similar to that harvested with the dry techniques, as confirmed by histological findings².

Usually, the tumescent infiltration is carried out under pressure by the use of pre-filled syringes or bag connected to a blunt cannula. Such system may slow down the infiltration process.

In order to speed up the operation, we have devised a low cost system to quickly infiltrate tumescent solution: we call it the “Tedde’s system”.

This system consists in a 60 ml Luer-Lock syringe jointed to a stopcock three-way; the second way of the stopcock is jointed with an infusion set and the third way is jointed with an extension set. The infusion set is connected to the bottle containing the tumescent solution. The extension set is connected to a blunt infiltration cannula (Figure 1).

Just before the infiltration, the assistant aspirates the solution from the bottle and fills the syringe. Then, the assistant change he the stopcock position turning it. The assistant gradually releases the solution through the system, guided by the surgeon movement (Figure 2). This allows the tumescent solution to infiltrate the fat continuously, while the surgeon moves the blunt cannu-



Figure 1. The Tedde's system. A stopcock three-way connected to a 60 ml Luer-Lock syringe, an infusion set and an extension set, the latter ending with a blunt infiltration cannula.

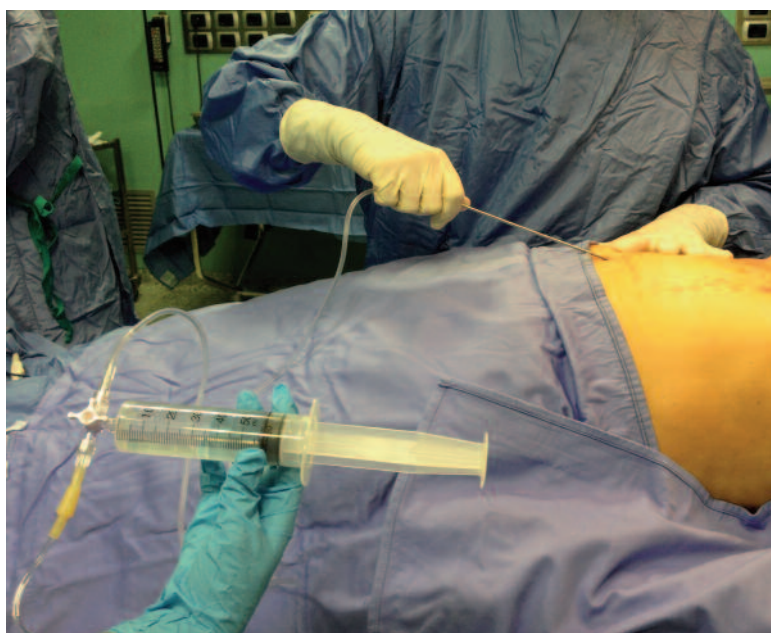


Figure 2. The surgeon infiltrates tumescent solution with a blunt cannula while the nurse (outside the surgical field) pushes the syringe plunger.

la. The whole operation can be easily repeated for each area to infiltrate, taking an accurate count of the infiltrated volumes.

We used the above technique during the last year in 70 consecutive patients. The infiltration rate volume was between 250 cc and 750 cc of tumescent solution. The infiltration time ranged from five (250 cc) to fifteen (750 cc) minutes. No intra- or perioperative postoperative complications were observed.

Several authors demonstrated the need to speed up the tumescent technique. Ozyazgan³ in 2004 described the use of a motorized infiltration pumps. However, this system may be subjected to technical failure and demands considerable financial investments. Horch⁴ in 2007 employed an air-driven irrigation system to speed up the tumescent technique. This system seems a good solution and reduces the costs if compared to the Ozyazcan system. Anyway, the air driven system requires the use of specific instrument sold exclusively for this purpose. Sarkar and Chatterjee⁵, in 2011, described a low cost tumescent infiltration system using a sphygmomanometer balloon pump connected with infiltration bottle. The main drawbacks of this system are that the amount of fluid injected is not visible and can not be calculated immediately. Therefore, the speed of injection diminishes when diminishing the amount of fluid into the bottle.

Conclusions

In our case load the Tedde's tumescent system reduces the time of the infiltration and conse-

quently of the whole surgical procedure. This system allows injecting the exact amount of tumescent solution desired by the surgeon in each single area to treat. The assistant, varying the pressure on the syringe plunger, can easily control the fluid rate. Moreover, this system is composed by low-cost materials, readily available in any operating room, and can be applied even to surgical procedure requiring large infiltration volumes.

Conflict of Interest

The Authors declare that there are no conflicts of interest.

References

- 1) FARACE F, MULAS P, BULLA A, RUBINO C. Syringe liposuction in lipofilling: an easy and cheap way to speed the procedure up. *J Plast Reconstr Aesthet Surg* 2009; 62: e613-614.
- 2) AGOSTINI T, LAZZERI D, PINI A, MARINO G, LI QUATTRINI A, BANI D, DINI M. Wet and dry techniques for structural fat graft harvesting: histomorphometric and cell viability assessments of lipoaspirated samples. *Plast Reconstr Surg* 2012; 130: 331e-339e.
- 3) OZYAZGAN I. Use of available micromotor irrigation system for liposuction tumescent fluid infiltration. *Plast Reconstr Surg* 2004; 113: 449.
- 4) HORCH RE. Modified device for easy infiltration of tumescent solution in liposuction. *Aesthetic Plast Surg* 2007; 31: 85-87.
- 5) SARKAR A, CHATTERJEE SS. A simple method of injecting tumescent fluid for liposuction. *Indian J Plast Surg* 2011; 44: 498-500.