

## Buttonhole. An old technique rediscovered

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### ABSTRACT

The present letter to the Editor regards the articles by de Silva *et al.*<sup>1</sup> and de Castro *et al.*<sup>2</sup> that lead us to two kinds of comments, the first refers to the language, and the second comment refers to the medical aspects.

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### DEAR EDITOR,

The articles by de Silva *et al.*<sup>1</sup> and de Castro *et al.*<sup>2</sup> lead us to two types of comments:

The first refers to the language: which term should be used for the method? *Buttonhole* is the English term, and, as a norm, we should not employ a foreign word when there is an equivalent one in our own language. As we say in Portuguese, *diálise*, not dialysis, *enxerto*, not graft, *dialisador capilar*, not hollow fiber, we must abolish the term “buttonhole”. “*Casa de botão*”, although correct, is a long and little euphonic term. We suggest the term “*botoeira*”, which means the same thing, albeit simple, short and synthetic. The term *botoeira*, according to the Houaiss dictionary, was introduced in the Portuguese language in 1543 and means “a small slit in a garment or piece of fabric, usually surrounded by stitches, used for fastening a button”, thus, perfectly adequate. This term has also been employed by the Portuguese-speaking medical community from Portugal. We suggest to JBN and the Brazilian nephrology community, in general, to establish regulations regarding the use of this term in future works.

The second comment refers to the medical aspects. In our recently published experience (Galante *et al.*<sup>3</sup>), the

buttonhole technique showed to be a useful and efficient method, which, in theory, could be routinely used in all patients. Its main advantages are the possibility of using short-trajectory fistulas, the absence of aneurysm formation, decrease in painful sensations during punctures, prolonging the fistula service life and decreasing bleeding and hematomas, improving the esthetical aspect. However, some basic difficulties affect its generalization.

The first one concerns the team training time. It is easier and faster to train a new nurse/nurse tech in the classic technique than in the buttonhole technique. The latter requires the puncture to be performed always in the same place, at the same angle and, initially, by the same person.

The second is the initial nurse/nurse tech resistance that has already been trained in hemodialysis to learn a new and more effortful technique. Sometimes, in addition to the resistance, there is also difficulty to learn the procedure. In addition to the three nurses that implemented the method, we are progressively extending the training to the rest of the team. Of the eighteen nurse techs, nine have been trained, but two have not adapted to the technique. The remaining will start the training. It is possible that a small number of nurses or nurse techs will never adapt to the method.

The third refers to longer time that the buttonhole technique requires during the puncture, when compared to the classic technique, thus reflecting on the total time of each dialysis session. That occurs essentially in the initial phase of creation of tunnel tracks and team training. Some impatient patients prefer the classic

technique to save time and leave the dialysis unit as soon as possible. In the long term, the total time can end up being shorter. The puncture site is already known, its trajectory is ready and, in the absence of hematomas or aneurysms, there is no need to search for new puncture sites. Some patients can be trained for self-puncturing. Three of our patients do so. The biggest advantage is that the patients get to know quite well their tunnel trajectory, greatly reducing the possibility of false trajectories. That also reduces the time spent by each member of the team.

We introduced a modification in the way the needle is held, by its flexible tube and not by the plastic “butterfly” (“touch cannulation” technique),<sup>4</sup> thus increasing the tactile sensitivity and decreasing the possibility of a false trajectory, as when the needle is well-positioned, it penetrates more easily, without the need for excessive force (Figure 1).

**Figure 1.** “Touch cannulation” technique – the professional performing the puncture holds the needle by the flexible tube and not by the plastic “butterfly”.



The fourth refers to the removal of the scab that forms in the puncture site and that two or three days later, can be quite adhered. This removal is essential to prevent the scab, or its fragments, when contaminated, from infecting the patient. Its removal requires time to prevent skin lesions and pain for the patient. In our service, we use the following routine: when the patient arrives at the unit, he or she undergoes the routine hygienization of the AVF and then a gauze pad soaked in antiseptic liquid soap is placed on the puncture site; after 5 to 15 minutes, the soap residue is removed with a gauze pad soaked in alcohol at 70% and then, with the tip of a gauze pad rolled in a conical shape, the scab is removed and the puncture is then performed. We have also used sweet almond oil applied daily, preferably twice a day, by the patients themselves over the scab, at home. It is low-cost, easy

to apply and maintains the scab softer and easier to remove. An impediment is the lack of adherence by the patient, due to forgetfulness or when he or she voluntarily does not perform the procedure. One risk, at least a theoretical one, is the use of non-sterile substances on a recent wound, even a punctiform one. However, the skin itself and the scab are already contaminated. The use of tweezers is complicated and expensive, as they have to be sterilized after their use to prevent cross-contamination between patients, which means the need to buy and sterilize dozens of them. The use of tweezers also adds further mechanical trauma to the skin. The same can be said when needles are used for such purpose. When the same needle is used for scab removal and for the puncture, it can become contaminated, even after stringent asepsis, causing infection. This procedure has been contraindicated in the literature.<sup>5</sup> The international market has blunt needles that have a disposable plastic device, as a mini-spatula, to remove the scab (*Capick*<sup>®</sup> scab remover, *Nipro Corporation*). It is up to the teams that use the buttonhole technique to demand that industries that manufacture the needles introduce such device in Brazil.

Finally, there is a problem regarding the substitution of the professional performing the puncture. Ideally, the puncture must be performed by the same person, who already “knows” the patient’s tunnels and so, can more easily perform the puncture and consequently makes fewer mistakes. However, although that is essential at the phase when the tunnel track is created, it is not viable in long-term practice. Vacation periods, days off, absenteeism or shift changes, either by the professional performing the puncture or the patient, make the puncture be performed by someone else, increasing the risks of errors and the creation of a false trajectory. We believe that tends to decrease with long-term training and the intensive use of the method by the team.

We have employed the buttonhole technique in 62 patients. Eight decided to leave the procedure due to reasons not related to the method: transference (5), death (2), and transplant (1). Fifteen had problems related to the AVF itself, and not the method: AVF thrombosis (8), inadequate vein development (6) and subclavian deep venous thrombosis (1). Finally, thirteen left the procedure due to technical failure, which occurred mainly at the implementation phase of the method in our service (learning period): difficulty in tunnel track formation (7), patient quitting (4), pain (1) and infection (1). Currently, we have 26 patients (28.5% of the total with AVF) using the buttonhole

technique, versus 65 using the classic technique. We are in agreement with Castro *et al.*, in which the technique must be employed initially in new fistulas, when mature for puncturing.

These difficulties must not discourage the team, as once the technique is learned, the degree of adherence is excellent. We consider that perseverance at the initial phase of the training is worthwhile regarding the patient's final benefit. A recent publication<sup>6</sup> showed that patients (19 of 23 - 86%) that underwent dialysis through the multiple puncture technique and were transferred to the buttonhole technique were satisfied and preferred the new technique.

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