Faster and Safer Graft Placement with Disposable Shiao Microimplanters

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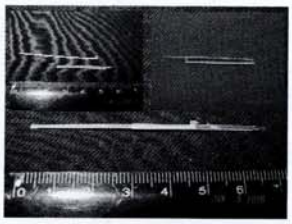

Figure 1. A loaded 18G microimplanter, its components, and a 19G microimplanter (upper right)

Figure 2. To load a graft, grasp its epithelium and slide it into the opening of the microimplanter

Figure 3. Placing into a recipient site (stained with gentian violet for easy viewing)

Figure 4. We generally use two placers, sometimes three to reduce the grafts' out-of-body time.

Placing the graft is a critical and the most difficult step in follicular unit transplant. For more than fifty years, forceps have been the primary tool for graft implantations in hair restoration surgeries.

To properly place a graft, this tried-and-true device is highly dependent on the skill level of assistants.

At the tips of their forceps, inexperienced assistants have sacrificed more than a few follicles and buried them in the scalp.

This has left many painful memories in those who started new hair-restoration-surgery clinics, and those who lost key assistants.

Because of the difficulty in placing, many skilled surgeons such as Drs. Choi, Kim,. Rassman, Boudjema, Rose, Anaba, and many more had developed various styles of implanters throughout the years. The Shiao microimplanter we developed is a simple, low-cost, disposable microimplanter with only two parts: a pushrod with a stopper at its tip tha t prevents the graft from inserted too deep into a site and a tube with a slit opening for easy graft loading. (Figure 1) Currently, it is available in four sizes: 20G (0.9mm), 19G (1.07mm), 18G (1.27mm), and 16G (1.65mm).

THE MAJOR ADVANTAGES FROM USING THE MICRO-IMPLANTERS INCLUDE:

1. Minimal handling of follicular unit by forceps: the graft is loaded into the implanter by grasping its epithelium and sliding through the implanter's opening (Figure 2). It is then inserted into a recipient site by the pushrod in one stroke (Figure 3). Forceps in the other hand can be used to adjust the graft. The bulb and bulge area of a graft are generally never handled by a forceps, potentially reducing trauma to the graft.

2. Short learning curve for follicular unit placement: new assistants can start placing as fast as 5 to 6 grafts per minute on their first case and become very comfortable with the microimplanters after five cases. Recent informal study showed our assistants can place as fast as 12 to 16 grafts per minute under ideal circumstances. Assistants also report preference over forceps, especially in difficult-to-place patients.

3. Decrease staff dependency: the ease of placing using the microimplanters allows every assistant to place follicles into graft sites, therefore reducing the dependency on specific graft-placement assistants. This significantly lessens worries about losing key assistants.

4. Easy pairing of follicular units: on suitable patients, inserting two follicular units into one slit for better density is never faster.

The increased speed comes at the cost of requiring a larger team. One or two loaders and preferably a transporter (a person who takes the microimplanter back and forth between the loaders and the placers) must be employed in the process. Each loader can generally load 13 to 15 grafts per minute. We often involve 5-6 assistants: 2-3 placers (Figure 4), 2 loaders, and a transporter. We suggest a team of at least 4 assistants with two placers, a loader and a loader/transporter. For clinics with four or more existing assistants, the implanters can be easily adopted into the current process and provide faster and safer graft placement.

In summary, we like to present this microimplanter as an effective tool that makes graft placement the most enjoyable part of hair restoration surgery. Anyone who is interested in obtaining some samples, please email tkshiao@yahoo.com.