Commentary on: Effectiveness, Longevity, and Complications of Facelift by Barbed Suture Insertion

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The authors of this paper, Bertossi et al., are to be congratulated for a timely review of barbed suture facelifts utilizing dissolvable threads (polydioxanone [PDO]) in 160 patients, with the appropriate conclusion that all initial improvements of facial lifting or contouring were absent at 1 year.

This reflects what many of us who are actively involved in threadlifts have believed: that dissolvable threads do not last and as they dissolve, all benefits are lost, which has been clearly shown through this study. As the authors and others have demonstrated, it is indisputable that threadlifts, whether dissolvable or permanent, can create a lifting and shaping of the facial soft tissues. It is only the duration of the effect or the longevity of the result that is constantly called into question (Figure 1).

In their retrospective analysis of 160 threadlift patients, Bertossi et al have carefully documented the type of threads utilized in their cohort of patients, the method of insertion, whether there was any intraoperative discomfort or pain, any postoperative sequelae, and the results, which were evaluated at 1, 6, and 12 months. The quality of the photographs, which appear standardized for size, lighting, and head position, are superb and makes it easy to compare the preoperative and postoperative appearances.

Bertossi et al have determined that the average expenditure of their patients for each threadlift was approximately 40% of the surgeon’s fee for a traditional facelift, which enables us to put into perspective whether the cost justifies the short duration of action.

The authors have also included a useful discussion of the different kinds of threads currently available and how they are inserted and deployed. Unfortunately, they were unable to evaluate the efficacy of the Woffles threads, because these threads are presently not commercially available. The Woffles thread is the thread utilized in the Woffles lift, which is the method that the author of this commentary has employed for the last 16 years.

The statistic in this paper that concerned me most was the complication rate, which occurred in 55 of 160 patients (34%) and included superficial displacement of the threads (11.2%), self-resolving erythema (9.4%), skin dimpling (6.2%), infection that necessitated suture removal (6.2%), and facial stiffness that ultimately resolved (2 patients). I would no longer include erythema, dimpling, or facial stiffness to be complications, because they occur routinely in threadlifting and eventually resolve spontaneously.

A more accurate complication rate would therefore be 17.4%, which is still high but was possibly related to technical issues during the insertion of the threads or sterility. With time and experience, however, this statistic should decrease significantly. If it does not, then that particular type of thread utilized in this study and/or its application may be problematic.

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Historical Perspective

A review of the history of barbed threads is perhaps useful at this juncture. Although some of this information is documented in the literature, I am able to shed light on the evolution of the threads and their incorporation into facial cosmetic procedures, having been intimately involved in the history of threadlift development and having performed over 1000 threadlifts.

Although barbed sutures were first described by Alcamo in 1961 and 1964, Fukuda in 1984, Buncke in 1999, and Ruff in 2001, they were primarily conceptualized and utilized for suturing wounds without having to tie any knots. No facial cosmetic applications were described or practiced by these authors at the time.

The first cosmetic application of barbed threads in the face was by Marlen Sulamanidze et al., who first described his Aptos Lift sutures in 1999 and published his results in

Figure 1. This 75-year-old white man shows severe jowling, deep nasolabial and marionette folds, and poor cervicomental angle. (A) Preoperative oblique view. (B) One day postoperative with significant correction of aging deformities. Eight lines (4 Woffles threads) were utilized on either side. (C) Three months postoperative showing mild recurrence of the marionette lines, but the patient is happy with the overall result.
2000. The next barbed suture for facial suspension and lifting that was described and clinically utilized was the Woffles thread utilized in the Woffles lift, which as previously mentioned is the method that I have employed for the last 16 years. The Woffles threads were manufactured for me by Al Kolster of KMI (Kolster Methods Inc, Corona, CA). The clinical results were first presented in 2003 and published in 2004 in this journal.2

All other threads for cosmetic facial use came after this, including the following: the Isse Threadlift, which necessitated surgical dissection of the scalp and fixation of the unidirectional barbed sutures to the temporal fascia; the Contour threads, which were initially similar to Isse’s design; the cone sutures (silhouette lift); and many others.

Interestingly, I first contacted Kolster in 2001 and sat in his workshop to design and develop the 60-cm bidirectional barbed Woffles threads, which were first clinically utilized in 2002. After Sulamanidze and I presented our respective cosmetic cases at a meeting in 2003,14 Isse approached me with his idea of utilizing similar but unidirectional threads that would be surgically fixated in the scalp. I introduced Isse to Kolster, and the Isse threads were then manufactured and clinically applied. Subsequently, Kolster was prevented from producing these threads anymore due to legal restrictions, and the Contour threads came to prominence. It was at this time that Isse and Kolster went back to the bench to devise a new technique, the cone threads, which are now known as silhouette sutures. Designed and patented by Kolster and tested and clinically utilized by Isse, these silhouette sutures became a viable alternative to the barbed threads available at that time.

The Woffles Lift

As one of the pioneers of barbed suture facelifts, I have been performing my own Woffles threadlifts since 2002 utilizing the patented Woffles thread, which is currently not commercially available. Made from polypropylene 2.0, the design of the thread has not changed since I first utilized it, and I continue to perform these procedures regularly. The thread is 60 cm long, with bidirectional barbs on either side of a central clear zone that allows the thread to be folded on itself in the temporal fascia as a self-fixating loop, thus increasing the pullout strength15 and avoiding any dissection or knot-tying in the scalp, which aids in rapid recovery and decreases the incidence of complications.

The original basis of utilizing polypropylene was that it is a permanent thread that in most patients elicits a capsule formation around it, and this internal “scar” acts as an exoskeleton, adding to the strength of the thread, its adhesion to the soft tissues, and ultimately the longevity of the result. With correct deployment of the threads from the jowls to the temple, passing from the subcutaneous plane through the SMAS to the temporal fascia, a meshwork of “neoligaments” is created to counter the inherent sagging of facial soft tissues. When the lifting is properly applied, the effect of the polypropylene can be quite dramatic, creating a strong, youthful ogee contour of the face.

In the current paper being reviewed, Bertossi et al have stated that for favorable results, the surgeon must have expertise in muscle kinetics, soft tissue anatomy, thread mechanics, and immunologic processes associated with suture placement. I could not agree more. Threadlifts look easy to perform, but obtaining stable and consistent results requires all of the above in addition to surgical skill, aesthetic judgement, practice, and experience that come from having performed many such lifts.

The first premise for success is that the threads must be inserted and secured properly utilizing a completely sterile surgical technique. Because of the hype around threadlifts as a nonsurgical, lifestyle, and lunchtime office procedure, there are physicians who treat the application of threadlifts as a minor procedure with only token sterility. As a result, infections and granulomas can occur. If not properly shortened, the ends of the threads can abut against the skin surface or extrude.

For all patients receiving the Woffles lift, the face and neck as well as the entire scalp and hair are thoroughly cleansed with chlorhexidine and povidone iodine before sterile drapes are applied. The threads are then inserted utilizing careful aseptic technique and trimmed to avoid protrusion from the skin. The face is molded in an upward direction, and, once lifted, the face and neck are dressed with transparent waterproof dressings. Our current complication rate is below 3%.

Immediately postoperation, the face typically looks like a “Joker” with exaggerated facial ogee curves, lifting of the cheeks, effacement of the nasolabial and marionette lines, smoothing of the jawline, and elevation of the buccal fat pad. There may be some dents, which can be smoothed out by finger pressure, by lightly tapping on the skin, or by just leaving them alone, because they will gradually resolve spontaneously over the next few days. Sometimes, when I do not want to disrupt any of the barbs by forceful tapping, I may prefer to add a small amount of Volite (Juvederm, Allergan) to smooth the dents.

With the benefit of 16 years of lecturing on16–24 and performing the Woffles lift, I am in a position to evaluate the usefulness of these barbed sutures and devise strategies for long-term use of the threads. All patients are informed that it is a temporary facelift effect that needs to be repeated, with more threads being added as re-sagging occurs (Figure 2). Previously placed threads are not removed. We explain to patients that a threadlift is not meant to be a one-off procedure but must be repeated. The patients are given realistic expectations so they are not disappointed when sagging recurs.
In our experience, the longevity has been anywhere from 1 to 9 years (Figure 2), depending on the age and health of the patient, the degree of skin laxity, the thickness of the skin, and the adequacy of facial volume. Younger patients with sufficient facial volume and thick skin fare the best, with results lasting on average 3 to 4 years, whereas older patients with poor elasticity of skin, volume depletion, and severe sagging may benefit for only a year or two.

Certainly, the results are not and cannot be permanent in any way. Aging is an ongoing process, and the facial soft tissues will age relative to the threads with consequent sagging, albeit at a slower rate.

In closing their article, Bertossi et al state that “barbed PDO sutures might best be applied in combination with open facelift procedures.” I disagree. Patients should be categorized according to their preferences. They are either surgical or nonsurgical patients. If the latter, then they must be prepared for the results and short longevity that come with the many different kinds of dissolvable threads that are being offered. If the former, there is no point placing dissolvable PDO threads in conjunction with an open facelift; it is better to just perform a full and proper facelift.

In my opinion, dissolvable PDO threads have limited usefulness. One of the reasons they exist is because thread

Figure 2. This 45-year-old female patient wished to improve early jowls and cheek descent with the creation of more youthful contours of the face. She had already decided that she did not wish to undergo traditional surgery and yet still wanted to look youthful and presentable. She preferred a complete nonsurgical approach to her aging. (A) Preoperative oblique view. (B) Immediate postoperative view after the first Woffles lift procedure. Eight lines (4 Woffles threads) were inserted on either side of the face. Note the accentuated ogee curve and the restitution of youthful contours with elevated cheekbones, increased malar volume, effacement of nasolabial and marionette lines, and a better jawline. (C) Four days postoperatively, the patient’s face looks more normal and the effect of the lift is less dramatic. (D) Four months postoperatively, she has good contours and shape of her face. (E) One year postoperatively, the correction of the patient’s jowls, midface, and cheeks is still evident. (F) Nine years postoperative and before the Woffles lift. Despite 9 years having elapsed, the patient’s face still looks lifted and better than her preoperative appearance. (G) Immediately after the second Woffles lift with 8 lines (4 Woffles threads) on each side. The procedure is essentially repeated without removing any existing threads. (H) The third post operative day after the second Woffles lift, showing accentuated Ogee curves and correction of aging deformities. (I) One year after the second Woffles lift and 10 years after the first lift, the patient shows a tangible but natural result.
manufacturers and physicians do not wish to deal with the legal issues that may arise from improperly placed permanent threads and their complications. With PDO threads, if there is inadvertent puckering of skin, dimpling, or denting, the patient can be reassured that the problem will just dissolve itself away and that their face will return to normal. However, this is hardly a valid premise on which to base a cosmetic procedure for someone’s face.

Again, I commend the authors for a neat, efficient study and their honest appraisal of a procedure that seems to have grown in popularity worldwide yet, unfortunately, has short-term results.
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