Thread lift with absorbable monofilament threads
(Journal of Japan Society of Aesthetic Plastic Surgery (JSAPS) 2013 Vol.35 No. 2)

Key words: Thread lift, sagging treatment, aesthetical acupuncture and moxibustion

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ABSTRACT

‘Thread lift’ is a treatment used to achieve a lifting effect on the face by inserting super-fine, absorbable monofilament threads into the skin. The threads can then be left in place. With a high level of safety, minimum downtime, instant and persistent results, this method is considered excellent in treating sagging skin. Having produced satisfactory results, this is a report on our treatment technique including a couple of case studies. Since this treatment does not have a very long history, a long-term follow-up will be required.

Introduction

In Japan, most of patients whose main symptom is sagging on the face tend to undergo minimally invasive treatment. Recently, with the advent of laser treatment, filler, and thread lift, less invasive and shorter downtime with effective results are possible. Among these, when compared to face lift surgery, thread lift treatment requires very short downtime and almost no visible scarring. From these advantages, the treatment tends to appeal to patients who do not wish to undergo invasive surgeries.

‘Thread lift’ can vary in accordance with kinds of thread and methods, but this paper explains thread lift using ‘monofilament absorbable’ thread and the good results from the treatment.

Fig 1.

a) Lead Fine Lift TM ( GRAND AESPIO INC., Korea )
b) V-shaped thread is placed into the skin.
METHODS

The thread used in this procedure is absorbable monofilament thread, USP size 5-0~7-0 (PDO: Polydioxanone), half-folded attached with size 25~31 G needle. It is injected into the skin and the thread will become V-shaped and stay there. (Lead Fine Lift, GRAND AESPIO, Korea : Fig 1, Table 1)

<table>
<thead>
<tr>
<th>needle</th>
<th>size</th>
<th>length</th>
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</thead>
<tbody>
<tr>
<td>31G</td>
<td>30mm</td>
<td>7-0</td>
<td>30mm</td>
<td></td>
</tr>
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<td></td>
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<tr>
<td></td>
<td>50mm</td>
<td>8-0</td>
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<td></td>
</tr>
<tr>
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<td>60mm</td>
<td>5-0</td>
<td>90mm</td>
<td></td>
</tr>
<tr>
<td>25G</td>
<td>90mm</td>
<td>5-0</td>
<td>150mm</td>
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</table>

Table 1

Local anesthesia is performed with 7% lidocaine cream before the procedure.

The procedure is performed on sagging area, starting from down to upward. While skin is pulled to the direction one wish it to be, needle is injected in the affected area. For the face line, the procedure will be performed parallel to the face line, and outward from the Marionette line.

Needles (SIZE 27G, length 60mm or SIZE 29G, length 40mm) are injected under the skin as many as possible. And then, up from there, as many needles as possible are injected again to the cheekbone-ward. (Fig. 2-a) In the cheek area, about 5 to 10 needles are used to the direction one wish to pull. (Fig. 2-b)

Since the bag and lateral angle of eyes are vulnerable to internal bleeding, the thinnest needle which is SIZE31G with the length of 30mm should be used with the upmost care. Needles are injected with the parallel to the contour of the eyes at the bag of the eyes, and parallel to the wrinkle at the lateral angle of the eyes. (Fig. 2-c)

Lastly, needles are removed while pressing under the gauze. Cold ice compresses are recommended for 10 to 15 minutes. The shorter the procedure is, the lesser the side effect will appear.
RESULTS

33 men and women from 22 to 69 years (average 47.5 yr-old) underwent thread lift treatment.

Most of the symptoms were facial sagginess, wanting smaller face, sagging around eyes, and crow’s feet. 25 people got the treatment for whole face. 6 people for cheek and face line. 2 people for area around eyes.

For the people who treated their face, cheek and face line, all of them said they’ve got smaller face right after the procedure because of the thread’s work of holding, by being fixated to tissue.
Also, people who treated their face and area around the eyes answered that it became much easier for them to open the eyes. After the procedure, most of the patients could enjoy the lifting and improvement of skin, and for the next 6 months rejuvenation result was continued. Patient who only treated the eye rim answered their small wrinkles were improved after one month.

Among the complication, hypodermal bleeding was most common. 2 people reported threads poking through the skin, but once the thread was removed, any scar or infection could not be found.

![Fig. 4 Frontal view](image)

a) pre-treatment  b) Soon after treatment

c) 1 month after treatment  d) 3 month after treatment  e) 6 month after treatment
SUBJECT: 40 year-old, female

Patient whose main problem was sagginess of the face
SIZE 29G, length of 40mm, USP size 6-0: for the face line, cheek and forehead
SIZE 31G, length of 30mm, USP size 7-0: for the periorbital line
Over all 118 thread were used (Fig.3)
Assessments were conducted 3 and 6 months after. (Fig. 4,5)

After 6 months, a little losing of elasticity occurred but, compared to before, face line improvement and more volume to cheek were still maintained and the patient expressed satisfaction.

CONSIDERATION

1. About thread lift

Thread lift procedure can differ since there are various kinds of threads and methods. There are absorbable, non-absorbable and mixed types of threads. Also, there’re two types of putting thread into skin. Free-floating method means just leaving the thread into skin while suspension/ fixed method mean fixing the thread into the tissue under the skin. Also, there are another kind of thread with barbs and cogs that attach to the underside of the skin and secure in place.

Potential complications of thread lift are puckering where the barb is pulling, threads poking through the skin, and infection. So it is recommended to use absorbable thread for the safety reason. This paper explains Lead Fine Lift that we’ve used for the procedure which is absorbable monofilament thread with smooth surface, free floating and is not being fixated to tissue.
2. About monofilament thread lift

Monofilament thread lift is a quite new procedure that was introduced in August, 2011 from Korea. The super-thin thread is put into the skin, and without fixing or suspension, lift up result is produced. Korea has started the procedure a few years ago, and this procedure is said to be a mixed treatment of oriental and western style, with immediate and continuous result from acupuncture.

There are a few products used in Japan, and we’ve chosen to use Lead Fine Lift (GRAND AESPIO, Korea). This is PDO (Polydioxanone), folded thread with needle size of 25~31G and USP size of 5-0~7-0, and is absorbable. When the thread is injected under the skin, the V shape thread will stay there. The thread is monofilament type and is different from threads with feathers/throne that pulls up the tissue. Lead Fine Lift is KFDA (Korea Food and Drug Administration) certified thread and is safe using PDO that will be absorbed after 180 to 240 days. In fact, ever since we started the treatment one year ago, there has been no report of complication originated from the thread itself.

Good candidates for this procedure would be patients who want to restore volume, improve hollowness and in-drawing of the cheeks, and long for a smaller, youthful appearance. But since thread lift is not a procedure that pulls up the skin itself or the surgery eliminating the extra skin, it would not be suitable for those whose sagginess is more serious and wrinkles are deep. From our experience, best candidates will be women from late 20’s and middle of 50’s whose skin is soft. More details are indicated in Table 2. Makeup is applicable right after the treatment resulting almost no down time. Potential complication or side effects can be pain, swelling, scarring of needle, but these symptoms usually get better or are gone in 1to 3 days. (Table 3) When threads are injected shallowly around eyes or mouth where frequent movements are occurred in a daily routine, thread expulsion might occur after the needle is removed, so extra care is needed in these areas. When thread is exposed, there will be no problem if immediate removal of thread is performed.
Fig. 5 Oblique view

a) pre-treatment
b) Soon after treatment
c) 1 month after treatment
d) 3 month after treatment
e) 6 month after treatment
### Table 2 Indication and contraindication

**Indication**
- lift up of the whole face
- smaller face
- contour adjustment
- improvement of the small wrinkles on the face
- promoting skin elasticity
- skin texture improvement

**Absolute contraindication**
- having skin infection and inflammation
- during pregnancy
- on anticoagulant medication
- patients who have blood related diseases

**Relative contraindication**
- When sagging is serious and deep (over 70 years)
- patients who have scar on the face
- autoimmune disease patients

### Table 3 complication and downtime

**Complication**
- thread expulsion
- pain
- pressure pain
- swelling
- rash
- infection
- internal bleeding (especially around the eyes)
- needle scar

**Downtime**
- applying make-up is possible after the procedure
a) HE×20. Arrow : PDO (polydioxanone)
b) HE X 100 Lymphocytes, histiocytes, and eosinophils, fibrosis observed around them.
c) treated side EVG×20
d) control side EVG×40
e) treated side EVG×100
f) treated side VB ×20
g) control side VB ×40
h) treated side VB ×100
3. *Histopathological opinion*

Treatment effect from thread lift is thought to be a tissue contradiction that results from cut/slash healing; however, there was no publishing on this so far. Thus, with consents from the males who received thread lift, we examined the tissue from the neck and conducted histopathological study 3 months after the treatment.

From HE (Hematoxylin Eosin) staining, PDO, being folded, could be found from the middle of the dermis to subcutaneous layer. Around PDO, as a result from foreign body reaction, lymphocyte, histiocyte and aerotropism clustering were witnessed. Also, around these areas, fibrosis was found too. (Fig. 6-a, b)

After EVG (Elastica van Gieson) staining or VB (Victoria Blue) staining, elastic fibrosis was witnessed around area where thread is injected. However, when comparing elastic fiber of the treated area from the controlled area in the dermis, no clear difference was found in the region.

4. *Reviewing on Treatment result and Principle*

Treatment that puts needles attached with absorbable thread inside of the skin and gets immediate lift up result is thought to be same as the acupoint therapy (aesthetic moxa cautery). Moxa cautery or moxibustion is a procedure applying oriental treatment onto one’s face and stimulate the acupoints (special spots) thinking them as healing points to maintain the youthful look or to resist the aging. (Fig.7) The main reason of the immediate results is thought to come from better blood flowing, lymph improvement, and adjustment of strained muscles.
Some acupoints are said to have responsible for a beautiful face. These are stated below. The way they work, however, has not been proved. (Fig. 8)

![Major facial acupuncture points](image)

**SUMMARY**

Thread lift using absorbable monofilament thread is introduced and explained in this paper. Though there are many reports on various methods, the thread lift stated in this paper has a very short downtime which can be a great appeal to Japanese. But because the procedure has only a brief history since the introduction, a long-term observation and evaluation is needed.

**ACKNOWLEDGEMENT**

I would like to express my special appreciation and thanks to professor Toshiko Yamochi, Department of Pathology, School of medicine, Showa University who offered unsparing guidelines and advices.