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## Original Article

# Effect of thread embedding acupuncture for facial wrinkles and laxity: a single-arm, prospective, open-label study

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## ABSTRACT

**Background:** There is a growing trend for patients to seek the least invasive treatments with less risk of complications and downtime for facial rejuvenation. Thread embedding acupuncture has become popular as a minimally invasive treatment. However, there is little clinical evidence in the literature regarding its effects.

**Methods:** This single-arm, prospective, open-label study recruited participants who were women aged 40–59 years, with Glogau photoaging scale III–IV. Fourteen participants received thread embedding acupuncture one time and were measured before and after 1 week from the procedure. The primary outcome was a jowl to subnasale vertical distance. The secondary outcomes were facial wrinkle distances, global esthetic improvement scale, Alexiades–Armenakas laxity scale, and patient-oriented self-assessment scale.

**Results:** Fourteen participants underwent thread embedding acupuncture alone, and 12 participants revisited for follow-up outcome measures. For the primary outcome measure, both jowls were elevated in vertical height by 1.87 mm (left) and 1.43 mm (right). Distances of both melolabial and nasolabial folds showed significant improvement. In the Alexiades–Armenakas laxity scale, each evaluator evaluated for four and nine participants by 0.5 grades improved. In the global esthetic improvement scale, improvement was graded as 1 and 2 in nine and five cases, respectively. The most common adverse events were mild bruising, swelling, and pain. However, adverse events occurred, although mostly minor and of short duration.

**Conclusion:** In this study, thread embedding acupuncture showed clinical potential for facial wrinkles and laxity. However, further large-scale trials with a controlled design and objective measurements are needed.

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## 1. Introduction

Thread embedding acupuncture (TEA) is a type of acupuncture treatment utilizing an absorbable thread that is attached to a needle.<sup>1</sup> After the acupuncture needle is inserted and removed, however, the thread is buried into human body to treat various disorders such as osteoporosis, constipation, and gastritis.<sup>2-4</sup> Recently, TEA targeting under dermis became known to be effective for facial wrinkles and laxity; its practice has begun in clinics.<sup>5</sup> TEA is similar to suture suspensions practiced in plastic surgery clinics; however, the procedure tools and methods are different. For several decades, there has been a growing trend for patients to pursue natural effects, to be reluctant for effects to be noticed upon immediate return to social and professional life, and also to prefer absorbable implants or materials. TEA is less invasive, and has short downtime and fewer side effects when compared with the surgical wrinkle removal sutures.<sup>6</sup>

There is little clinical evidence in the literature regarding the effects of TEA. In recent years, few retrospective chart reviews reported the effectiveness and safety of TEA for facial wrinkles and laxity using subjective satisfaction rating systems as primary outcomes.<sup>7,8</sup> We conducted a single-arm, prospective, open-label study to investigate the effect of TEA on facial wrinkles and laxity using a quantitative outcome.

## 2. Methods

### 2.1. Ethics approval

This study was performed in accordance with the International Committee on Harmonization Good Clinical Practice guidelines and the revised version of the Declaration of Helsinki. The trial protocol was approved by the Institutional Review Board of Kyung Hee University Hospital at Gangdong (KHNMC-OH-2014-09-007-002). Written informed consent was obtained from all participants prior to enrollment, and participants were given ample time to decide about participating before signing the consent form.

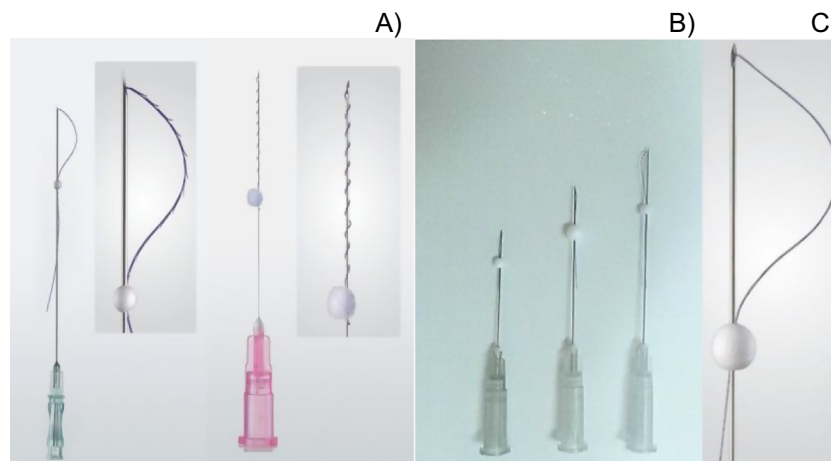
### 2.2. Participant recruitment and inclusion/exclusion criteria

Participants were recruited by advertisements on bulletin boards at Kyung Hee University Hospital at Gangdong. Included were individuals (1) who were women, (2) aged 40–59 years, (3) with Glogau photoaging scale III or IV,<sup>9</sup> and (4) who agreed not to receive any other treatment during the study period. We excluded individuals who (1) were pregnant or breastfeeding; (2) had botulinum toxin, filler, or other implant injection within 6 months immediately prior to study entry; (3) had a keloidal or hypertrophic scar tendency; (4) had a his-

**Table 1 – Specification of thread embedding acupunctures used in this study.**

Thread		Needle			
Material	Shape	USP	Length (mm)	Gauge	Length (mm)
Polydioxanone	Bidirectional cogs	4-0	110	23	60
	Screw	5-0	70	27	50
	Mono	5-0	30	27	30
	Mono	5-0	50	27	40
	Mono	5-0	70	27	50

USP, United State Pharmacopeia.



**Fig. 1 – The shape of TEA.**

**(A) Bidirectional cog-shaped TEA. (B) Screw-shaped TEA. (C) Mono-shaped TEA. TEA, thread embedding acupuncture.**

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