

Thread Migration After Polydioxanone Thread Lift

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Case report

Keywords: thread, face lift, complication

Posted Date: November 2nd, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-98897/v1>

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Abstract

Background:

The thread-lift has gained popular interest as a minimally invasive procedure because it is simple and reliable. Additionally, it has shorter recovery time and fewer complications than facelift surgery. However, complications including hematoma, infection, facial asymmetry, thread exposure, thread migration, dimpling, alopecia, parotid gland injury, and scarring can occur. We report a case of thread migration after a polydioxanone (PDO) thread lift.

Case presentation:

A 40-year-old woman underwent a thread lift using a PDO cogged thread. Insertion sites were marked along the temporal hairline. The expected distal ends of threads were marked at least 1.5 cm apart from the nasolabial and marionette folds and 2.5 cm apart from the mandibular border. All threads were inserted into the deep subcutaneous plane. After 1 month, she complained of a foreign body sensation and pain just lateral to the left mouth corner. She showed a linear elevation with oblique direction, and a linear material was palpated with little mobility. The removed material was confirmed to be a part of the inserted thread.

Conclusion:

During thread lift, it is important to remove the cannula gently and straightly to avoid breaking the thread. Also, it is better to avoid strong manual massage on the path of the thread.

Background

Recently, an interest in anti-aging procedures has increased; at the same time, an ongoing demand for minimally invasive procedures such as the thread lift has gained popularity. The thread lift, so-called "lunchtime facelift", is simple and reliable and has lesser downtime and complications than surgical facelift [1, 2]. However, some complications including pain, erythema, hematoma, asymmetry, thread migration or exposure, infection, granuloma, skin dimpling or irregularity, parotid gland injury, alopecia, and scarring can occur [1–4]. We report the case of a thread migration and thread removal after a polydioxanone (PDO) thread lift.

Case Presentation

A 40-year-old woman underwent a thread lift to enhance the jaw line using 20-cm 1 – 0 barbed PDO threads (Ultra V Ez Cannula™, Ultra V Co., Ltd., Seoul, Korea). The cog portion of this thread was 10 cm, and the cogs formed a 360-degree spiral. The procedure was performed under intravenous (IV) sedation and local anesthesia. A preoperative design was performed at sitting position. Insertion sites were marked along the temporal hairline. The expected distal ends of the threads were marked at least 1.5 cm

apart from the nasolabial and marionette folds and 2.5 cm apart from the mandibular border. A solution of 2% lidocaine with 1:100,000 epinephrine was injected into the puncture sites and the expected trajectory lines of the POD threads. Three puncture sites were made using an 18-G needle along the temporal hairline. A total of 6 threads were inserted into each of the 3 puncture sites. All threads were inserted into the deep subcutaneous plane. The immediate result was favorable and the patient was satisfied with the results.

After 1 month, the patient complained about a foreign body sensation and pain just lateral to the left corner of the mouth. Those symptoms were aggravated during a full smile and full opening of the mouth. During a physical examination, the patient showed a linear elevation with oblique direction lateral to the left corner of the mouth, and a linear material was palpated with little mobility (Fig. 1). Considering the direction of the cogs, a 3-mm incision was made at the caudal end of the palpated material. The incision site was spread using sharp scissors, and the distal end of the palpated material was extracted easily without resistance using mosquito forceps. The removed material was confirmed as a part of the inserted thread (Fig. 2). After removing the thread, the symptoms and signs disappeared, and the incision site healed uneventfully.

Discussion

Since Sulamanidze's antiptosis subdermal suspension suture (Aptos) was introduced in 1998, various techniques and products of thread lifting have been developed [5–7]. When nonabsorbable sutures are used in deep tissues, they remain permanently in place, which could later result in complications. Therefore, absorbable sutures were preferable, and as a result, were developed [8–10]. Nowadays, a barbed absorbable PDO thread is commonly used for thread lifts in Korea [3, 11]. The principle of a barbed-thread lift is to insert a barbed thread, pull the sagging tissues toward the barb, and hang the tissues around the barb. In the short term, the tissues are lifted by the resistance created by the barb; however, in the long term, the lift is maintained by fibrotic adhesion [12]. PDO threads are absorbed in about 6 months [1–3, 11].

They not only tighten and lift the skin but also improve its elasticity as a collagen stimulant. In *in vivo* studies, the fibrous capsule around the PDO thread was observed, followed by inflammation and increased collagen and transforming growth factor-beta level [9, 13]. This could maintain the lifting and tightening effects after thread absorption. In recent reports about the complications of PDO thread lift, mild swelling (45.7%), bruising (31.4%), dimpling (8.5%), and asymmetry (2.8%) were reported [3]. Other studies similarly reported bruising, swelling, and asymmetry as complications [11]. Bertossi *et al.* reported complications after barbed PDO thread lift, including superficial displacement (11.2%), erythema (9.4%), skin dimpling (6.2%), infection (6.2%), and facial stiffness (1.2%) [1].

It is not common for thread migration to occur after a POD thread lift like what happened in our case. As the thread lay in the cannula, it was hard to assume that the thread broke during the insertion process. However, during the removal of the cannula from the thread, some part of the thread could have twisted

or broken unless the cannula was removed gently and straightly. Early breakdown might be possible when an expired thread is used. In this case, the surgeon checked the expiration date of the thread used, and it had not expired. In addition, the absorption time of the PDO thread could vary from case to case. It depends on a patient's metabolic rate, insertion layer, thread thickness, pattern of facial movements, and so on. A repetitive movement of the facial muscles could have caused thread breakdown and broken segment migration. Also, mechanical trauma, such as strong manual massage on the pathway of the thread, could have caused early breakdown and migration of the thread.

Conclusion

To prevent thread migration, it is important to remove the cannula gently and straightly to avoid breaking the thread. In addition, strong manual massage on the path of the thread should be avoided. It is always important to explain the complications before the procedure to the patient.

Declarations

Acknowledgements

Not applicable

Consent for publication

The patient provided written informed consent for the publication and the use of her images.

Authors' Contribution

All authors contributed to the study conception and design. The first draft of the manuscript was written by Kyung Hee Min and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Funding

The author has no financial interest to declare in relation to the content of this article. No external funding was received.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

The study was approved by the Institutional Review Board of Eulji University Eulji Medical Center (IRB No. EMCIRB 2020-06-015-001) and performed in accordance with the principles of the Declaration of

Helsinki. Written informed consents were obtained.

Competing interests

The authors declares that they have no competing interests.

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Figures



Figure 1

A linear elevation with oblique direction lateral to the left mouth corner (arrow).

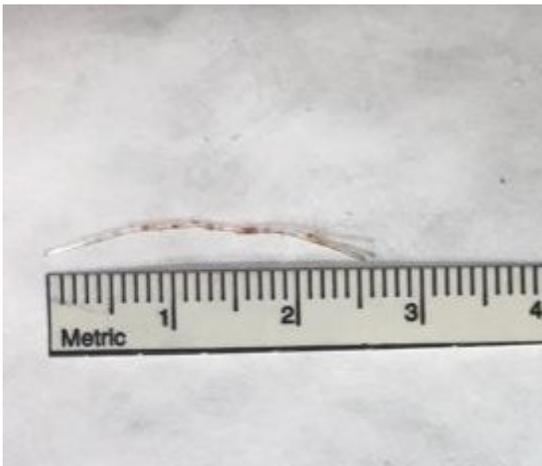


Figure 2

The extracted thread was confirmed as a part of the inserted thread.