

The presence of salivary fistulae diagnostic for VWS is not the basic medical problem. Much more significant is the probability of developing cleft defects by the offspring of the patients, which reaches 67%; hence, this finding is of great significance for genetic counseling.¹⁹

CONCLUSION

We describe a 3-year-old VWS presenting with bilateral lower lip pits with cleft soft palate on which we have defined a novel termination variant in the *IRF6* gene. This novel pathogenic variant in the *IRF6* gene may contribute to understanding the genetic aspect of VWS. The VWS must always be considered in familial cleft palate as well as in families with mixed orofacial clefts. Clinical diagnosis of VWS requires an additional examination for the family members to identify other members with the syndrome due to its penetrant nature. Genetic counseling is crucial because of the patients suffering from VWS have a high risk of transmitting to their children.

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Complication After PDO Threads Lift

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Abstract: Thread-lifting is as a minimally invasive procedure with limited scarring, rapid recovery, and fewer complications compared with the standard incisional surgery for facial rejuvenation. Using absorbable thread-like polydioxanone is a relatively simple procedure that is also performed by nonmedical professionals in Korea. Although several acute or delayed complications after using non-absorbable thread types were also reported, it is uncommon to find cellulitis caused by a delayed complication after thread-lifting. A 41-year-old woman presented to our clinic with inflamed multiple palpable masses. She underwent 3 courses of acupoint embedding therapy at a Korean oriental medical clinic. She was treated with combination antibiotic therapy; however, the inflammation did not subside. Consequently, excisional biopsy was performed under local anesthesia. During the procedure, threads were detected and removed. Dimpling, thread exposure, alopecia, under-correction, asymmetry, and parotid gland injury also can occur as early complications of the procedure. Fortunately, these reactions are predominantly mild to moderate in intensity, and can be corrected by a relatively simple procedure. Chronic inflammatory reactions in the thread-lifting area, as identified in the authors' case, are an infrequent complication. It is recommended to consult with experts in the field for the implementation of this procedure. In addition, experts also need to notify the above side effects and solutions in advance to ensure safe and satisfactory procedures for their patients.

Key Words: Acupoint embedding therapy, cellulitis, complication, polydioxanone thread

Plastic surgery has evolved in a less invasive direction. Many procedures and techniques for face-lifts have been investigated to avoid invasive surgery while retaining improved results. Thread-lifting is as a minimally invasive procedure with minimized scarring, rapid recovery, and fewer complications compared with the standard incisional surgery for facial rejuvenation.^{1,2} Thread technique for facial-lifting is therefore becoming increasingly popular with both doctors and patients. Thread materials may be classified as absorbable or nonabsorbable. Nonabsorbable barbed sutures have shown that thread-lifting can be a good alternative to more invasive procedures.³ However, nonabsorbable threads remain permanently in the tissue and result in complications, including palpitations and occasional extrusion of sutures through the skin. Consequently, face-lifting procedures using absorbable threads

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FIGURE 1. After 3 courses of acupoint embedding therapy, multiple tender, erythematous linear nodules were observed in both cheeks of the patient.

have become preferable. It is a relatively simple procedure that is also performed by nonmedical professionals in Korea. Although several acute or delayed complications after using nonabsorbable thread types were also reported,⁴ it is uncommon to find cellulitis caused by a delayed complication after thread-lifting. Only few reports present images of this delayed complication. In this case report, we describe a patient who presented with cellulitis with multiple chronic inflammatory reactions after the procedure was performed by a Korean oriental doctor.

PATIENT PRESENTATION

A 41-year-old woman presented to our clinic with inflamed multiple palpable masses (Fig. 1). The condition had persisted for approximately 3 months. Over the last 2 years, she underwent 3 courses of acupoint embedding therapy (AET) at a Korean oriental medical clinic. The patient recalled the use of polydioxanone (PDO) thread for the AET. After 5 months, the 3 courses of AET were over. However, multiple tender, erythematous linear nodules were observed on her cheeks. She was treated with combination antibiotic therapy; however, the inflammation did not subside. A computed tomography (CT) scan revealed multiple small nodular lesions in the subcutaneous layer of both her cheeks (Fig. 2). Consequently, excisional biopsy was performed under local anesthesia. During the procedure, threads were detected and removed. The histopathologic findings revealed chronic active inflammation with inflamed granulation tissue, abscess, vague granuloma, and multinucleated giant cells. After the biopsy, the tenderness and swelling in both cheeks decreased. Moreover, the swelling and tenderness resolved completely 2 weeks postoperatively. At the 3-year follow-up, apart from scarring, no other complications were observed.

DISCUSSION

Since Sulamanidze's first invention of barbed suture in the late 1990s, the use of thread has increased. Furthermore, the benefits of

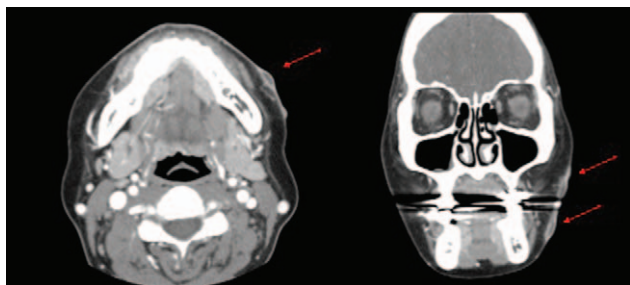


FIGURE 2. Computed tomography scan displays multiple small nodular lesions in the subcutaneous layer of both cheeks of the patient (red arrow).

using thread for face-lifting include short recovery time, minimal scarring, good-lifting, and high patient satisfaction rate.¹ As a result, the interest in face-lifting using thread has drastically increased. Many kinds of threads have been developed with respect to manufacturers, components, and differences among synthetic methods of cog, and are widely used.

Polydioxanone threads are predominantly used for such procedures as they are readily available in the market and entirely absorbable by the body. The sutures are completely degraded over a period of 4 to 6 months by the immune system. However, the PDO material is a powerful collagen stimulant. The immediate effect observed is the lifting of the tissue owing to the mechanical action produced by the thread. Once positioned in the subcutaneous tissue, the thread continues to exert its action on the tissues.⁵ Upon molecular analysis, type 1 collagen and transforming growth factor- β 1 levels were observed to significantly increase throughout the 7-month study period in the operated skin compared with the normal skin.⁶ Despite the development of knotless sutures or other safety procedures, the knowledge of anatomy or understanding of the mechanism of thread-lift must be improved. Moreover, in Korea, nonmedical oriental doctors also perform PDO thread face-lifts in the name of AET (maesunchim) without sufficient knowledge of anatomy and the ability to resolve complications.

The most common complication observed is unmanageable pain, thread extrusion, dimpling, sensory abnormality, and foreign body reactions. According to a report by Kaminer et al, patients experienced postprocedural side effects, including swelling, bruising, extrusion of thread, and ear numbness. The risk of complications increased with the number of threads used.⁴ Yeo et al reported possible early complications of the absorbable thread.⁷ Dimpling, thread exposure, alopecia, under-correction, asymmetry, and parotid gland injury also can occur as early complications of the procedure.

Fortunately, these side effects are generally mild to moderate, and can be corrected in relatively simple procedures with no permanent sequencing.

Chronic inflammatory reactions are an infrequent complication in thread-lifting. Some authors suggested that repetitive trauma and micromovement between the barbs of the sutures and the surrounding capsule cause chronic inflammation in soft tissues of face.¹

One way to avoid inflammation is to educate patients about trauma prevention after the threads have been inserted. If patients have a chronic inflammatory reaction, we should treat with antibiotics first. However, if it does not work, surgical excision must be considered despite scarring.

To reduce the above complications, it is necessary to identify the surrounding structures such as parotid gland, various layers of face, and the locations of nerve and vessels. Moreover, patients must be reminded that the procedure could incur various early or late complications like in our case. Notably, it is also important to have the expertise and knowledge to solve complex problems with flexibility.

In conclusion, the cellulitis and multiple abscesses observed in our patient are uncommon late complications of the PDO thread-lift. Polydioxanone thread-lift is a relatively simple and effective procedure. However, it is recommended to consult with experts in the field for the implementation of this procedure. In addition, experts also need to notify the above side effects and solutions in advance to ensure safe and satisfactory procedures for their patients.

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Cephalometric Evaluation of the Upper Airway in Different Skeletal Classifications of Jaws

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Background: Respiratory system is an important section in development of maxillofacial components and many studies indicated its effect on normal growth of the jaws. The aim of this study is to evaluate upper airway in different skeletal classifications of jaws in lateral cephalogram and its relation to age and gender.

Materials and Methods: Study samples were 105 digital cephalometric radiographies, 72 females and 33 males. Lateral cephalograms were hand traced and based on Stainer analysis, there were 30 samples in Class I, 30 samples in Class II and 45 samples in Class III subgroup. Vertical linear measurements, horizontal linear measurements, and angular measurement, proportions and space measurements of the airway in the Cephalograms were analyzed by AutoCAD software.

Results: Data were analyzed using SPSS software version 20. Two horizontal linear measurement (the hypo pharyngeal airway depth, the nasopharyngeal airway depth) and one space measurement (soft palate space) were significantly different in skeletal classes. Vertical and horizontal linear measurements in the 3 groups were increased significantly in men rather than women. The developmental age of groups showed some significant differences.

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Conclusion: Upper airway dimension is different in different skeletal classes, developmental ages, and gender.

Key Words: Cephalometry, jaw's classification, upper airway

The influence of respiratory activities on growth and development of facial skeleton has been argued in many studies.¹ Some of them have identified significant correlation between pharyngeal and maxillofacial systems^{2,3} but others did not report any relationship, thus there are some controversies.⁴

Airway space is composed of 3 parts; nasopharynx, oropharynx and hypopharynx, which contain hard and soft tissues.⁵ The primary factor that indicates the size of the upper airway space, is the amount of soft tissue surrounding the dentofacial skeleton and its growth.⁶ Adenoid hypertrophy, tonsillar hypertrophy, infection, allergic rhinitis, and chronic rhinitis can lead to mouth breathing.⁷ A normal upper airway improves nasal breathing, which is important in maxillofacial development,^{8,9} because chronic mouth breathing can disrupt correct pronunciation, create maxillofacial abnormalities and tooth malposition, which are common demands for orthodontic treatment.¹⁰ Some abnormalities caused by obstruction of the upper airway, include: incompetent lip posture, protrusion of maxillary teeth, high palatal vault, increase of anterior face height, and narrowed maxillary dental arch.¹¹

There is a mutual interaction between the pharynx, and maxillofacial structures and dental system, because of their significant relationship.^{6,12} Memon et al showed that the airway dimensions in patients with maxillary and mandibular retrognathism are narrower, antero-posteriorly.¹³ Other researches showed that the upper airway was narrower in Class II division 1 without retrognathism.¹² Therefore, there are some controversies on this regard.^{14–16}

In the process of diagnosis and treatment planning, an orthodontist can use pharyngeal dimension in different skeletal classifications.^{13,17} The anteroposterior position of maxilla and mandible, which make the facial skeletal pattern, have an influence in upper airway dimensions.⁹ Therefore, one of the most important methods for upper airway evaluation is skeletal classification under comparison.¹⁷

Upper airway evaluation has been varied in recent studies, such as computed tomography (CT), magnetic resonance imaging (MRI), polysomnography, acoustic reflection, fiberoptic pharyngoscopy, and lateral cephalogram—which is the most common¹⁸—since the cost and exposure to X-ray is minimal in cephalometry, and also, it is easier to analyze the airway and craniofacial morphology at the same time.¹⁹

Cephalometric airway dimensions vary in different genders and ethnic groups, and few reports, evaluating the Iranian population, have been published. The purpose of this study is to compare different upper airway measurements in cephalometric images, in three classes of malocclusion, in a group of Iranian patients.

METHODS AND MATERIALS

The present cross-sectional study has been conducted on 105 digital cephalometric radiographies belonging to 72 females and 33 males, including 30 Class I, 30 Class II and 45 Class III patients, referring to the oral and maxillofacial radiology department of (in order to blinding) University of Medical Sciences.

All images were obtained in the habitual centric occlusion, with teeth in contact, lips relaxed, and head in natural position. The digital radiography device (Proline, PlanMega, EC) was equipped with the CR system (Konica, Japan) and a printer (Konica, Japan), images were prepared with standard magnification.

The inclusion criteria were:

- Cervical vertebral maturational stage between 4 and 6.⁵