Contents

Fig. 1.4 Absorbable and nonabsorbable APTOS threads for the face

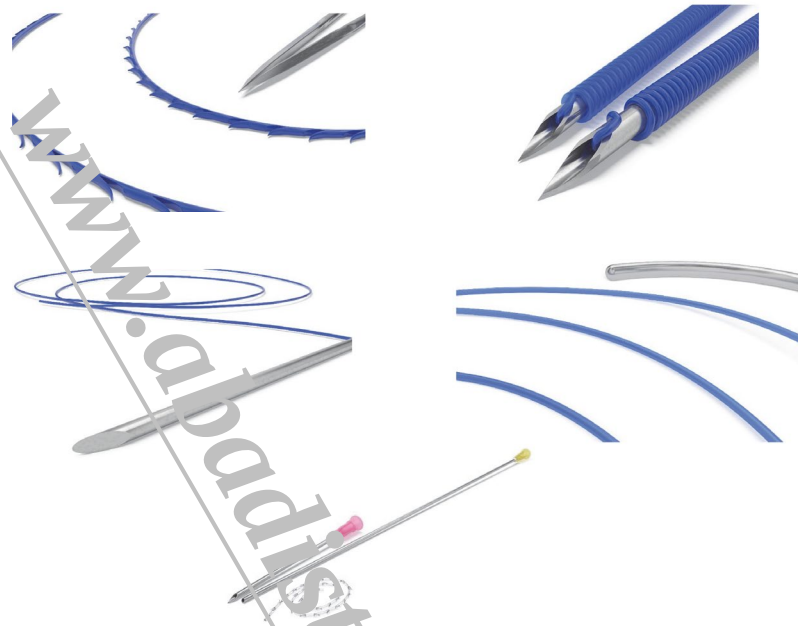

Fig. 1.5 Absorbable and nonabsorbable APTOS threads for the body

The author has come to lose interest in the thread lifting procedures since the effect was not as much as we first expected, and, as explained above, several problems were found, using the APTOS thread.

Afterward, the U-shaped Quill lift with cogs made of absorbable PDO (polydioxanone), which was developed for suturing purposes in other countries, became available and it was the first absorbable cogged threads with actual lifting effects that the author got to use (Fig. 1.6).

The Quill lift thread was originally produced not for the lifting procedure, but rather for suturing purposes, which consisted of the central part without cogs and both sides that are made of cogs with opposite directions thereby strongly pulling and gathering the tissues to the central part. It was the first thread model produced with the principle of U- or V-shaped lifting threads, which are widely used types of lifting threads these days. However, when compared to the current models, the initial model was considerably thicker and rougher, causing many discomforts in patients, such as irritation or stabbing pain when the threads are broken.

Since an absorbable thread with cogs that can make a significant lifting effect was not yet released, Quill lift was used despite the many problems it caused. Then, the EZ lift, a U- or V-shaped cogged thread developed with principles of Quill lift, but purely for lifting purposes, was released for the first time in Korea. Although there was an inconvenience caused by the unabsorbable nature of polypropylene, it was more effective in lifting than existing products, gaining much attention from the clinicians and mainly being used for the procedures.

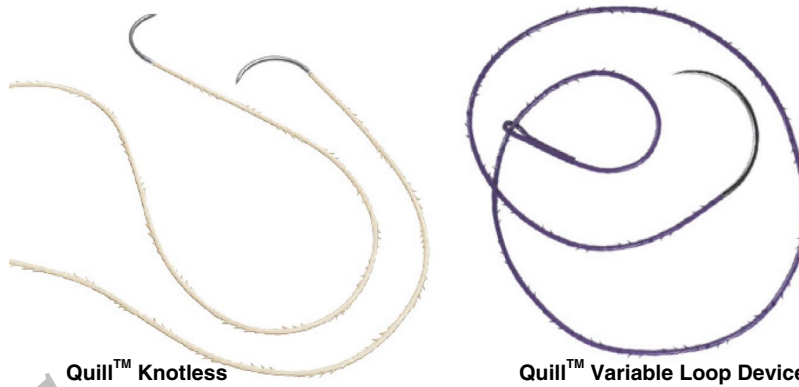

Fig. 1.6 Quill lifting threads

Unlike the initial APTOS thread lifting, this lifting method using U- or V-shaped cogged threads was not only effective in lifting the drooped tissues of the cheek and mouth but also in making slimmer facial shapes. With lifting procedures, it was possible to improve the squared facial shape with decreased skin elasticity with age and to intensely lift the drooped skin and tissues on cheeks and chins even in young patients, making the face smaller and slimmer.

However, while the procedure had the excellent effect of lifting the tissues of the lower facial part and the neck, patients got to feel severe headaches, when the thread was fixed too deep, instead of precisely on the deep temporal fascia. On the contrary, when fixed to a superficial layer, the cogs of both sides of threads lose their balance, since the noncogged central part may not play its role as a buffer zone by firm embedding and finally, the threads often get pulled out toward the side where the force was concentrated.

In addition, when using certain products for the first time, the main concern was the efficacy of the procedures. While the product had a strong lifting effect, when the procedure was mistakenly performed or the barbs held the targeted skin too superficially, adverse effects such as skin dimpling or unevenness were found, which lasted more than one or two months and were not relieved by massage. In the aspect of materials of threads, since the nylon threads were not absorbable, when moving the face or making facial expressions after the procedure, the threads displacement or irritating sense were increasingly reported as the procedures were more generally performed. Also, as with the case of the APTOS thread, even when a patient wants to remove the threads for any reason, there is a real problem that there is no easy way to remove them.

For this reason, since the late 2000s, the lifting method using the absorbable PDO thread, similar to the Quill lift, has been developed and used in Korea. Among the various types of absorbable suture threads used in various surgical operations including plastic surgery, PDO has been widely used as a material for absorbable lifting threads because it has a relatively long half-life and less tissue reaction than Catgut or Dexon.

These absorbable PDO threads were used based on the findings suggesting that a short monofilament thread without cogs may improve skin tone and elasticity when inserted under the skin. With the first introduction of short PDO threads with fine cogs, the technique of contouring the thread shape also developed. Various designs were developed, including a straight type, mainly used initially and gradually converted to the bundling of two lines; a twin type; a twist type, which is made by twisted monofilament threads; a coil type, coiling the monofilament threads on the needle; and water drop type that is embossed like water droplets (Fig. 1.7). Recently, a product that is made by braided multiple strands of monofilaments has been developed and can be used as a scaffold for the skin and tissues.

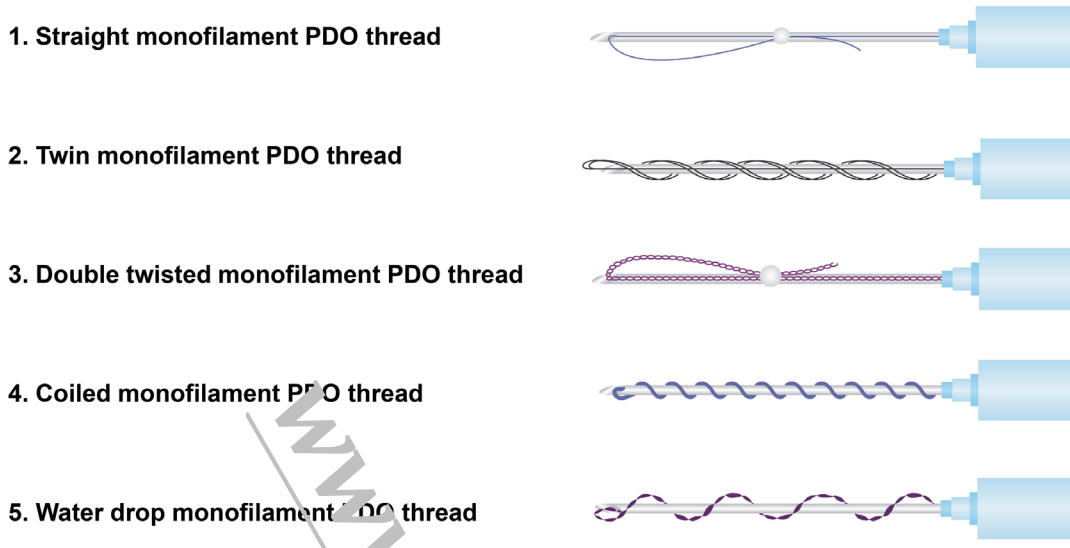

Fig. 1.7 Various types of monofilament PDO threads (i-THREAD, HEALUX)

In addition, as the technique of making cogs on the absorbable thread has also been developed, diversifying the number and shape of the cogs and the thickness of the threads, products with strong tensile force cogs are now available and thus, the actual lifting effect of the absorbable thread that naturally pulls the tissue also improved.

It still seems that monofilament thread lifting, for which several PDO threads without cogs integrating the needle are inserted to improve skin tone and resilience, is commonly performed among the various lifting methods and it is assumed to be due to its simple procedural process, manageability, and decreased risks of post-procedural complications or swelling. In addition, considering the materials of the thread, there is an immediate wound-healing process in the tissue in terms of the physiological effect on the skin when using the absorbable threads. As a result, new connective tissues are increased and new capillary blood vessels are formed. Since the retention period of the thread is more than 6 months, it is gradually absorbed, continuously stimulating collagen production and activating skin regeneration. As a result, the skin gets to look younger. For the physical effects, the absorbable thread helps skin tightening, firming, and shaping, which makes the skin healthier and more elastic. It naturally smoothens the lines of the cheek and jaw, which helps reduce wrinkles and make elastic and narrow facial features. Concomitantly, the thread serves as a scaffold in the skin, which enhances the effect and duration of the accompanying procedures such as filler and toxin injection, fat transplantation, laser therapy, and so on. Nowadays, these types of monofilament threads have become very diverse, and many methods of treatment have been developed, monofilament thread lifting procedures have established a solid foothold in the esthetic markets.

In the mid-2000s, gold threads, which were popular in Japan at the time, were introduced to Korea and also became prevalent, with some domestic companies starting to manufacture gold threads themselves and some groups of clinicians studying the effects of gold thread lifting. The authors used to perform gold thread lifting frequently, based on the findings on gold thread lifting that shows improvements in skin tone by stimulating collagen proliferation, which were even better outcomes than that of simple PDO threads, and its prevalent usages in Europe. Because the inserted gold threads of the initial model tend to be pulled out easily, due to the stiff nature of the material, the pure gold, the product that was designed to insert the PDO threads and

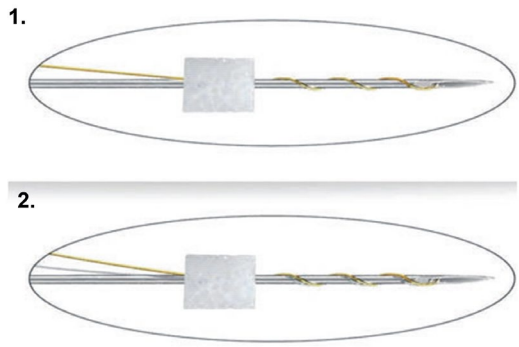

Fig. 1.8 (1) Gold thread, (2) gold and PDO combination thread

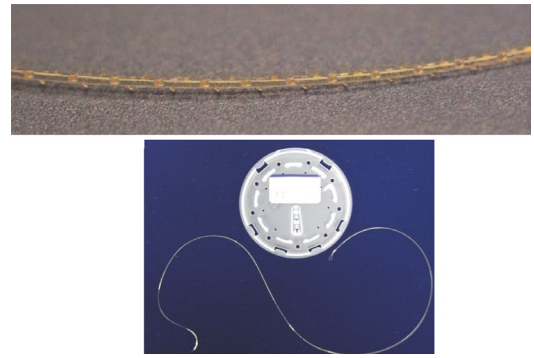

Fig. 1.9 V-loc lifting threads

the gold threads at the same time was developed. The PDO threads inserted with gold threads helped the settling of gold threads to the skin without being pulled out easily, facilitating the insertion of gold threads. It compensated for the disadvantage of the gold threads of the delayed effects when compared to the PDO threads, playing an auxiliary role in stimulating skin tissue (Fig. 1.8).

Nowadays, the product has been changed for easy usage, coating the PDO thread with gold on the outside to achieve the effects of the PDO thread and the pure gold thread simultaneously. Although any form of a product containing gold may have a lasting effect, the metal that remains in the body may disturb the results of many medical radiologic evaluations. Also, in patients with a lot of laser procedures, the gold threads inserted superficially on the surface of the skin may cause pigmentation, so the author does not perform the procedure, but some clinicians still prefer gold thread lifting.

Even though absorbable monofilament threads without cogs are frequently used for the natural outcomes, due to Koreans' thicker and firmer skin properties and heavier weight of the tissue per unit of lifting area, compared to that of Caucasian people, it is necessary to use absorbable lifting threads with more strength to pull the tissue. Since the author initially focused on lifting the tissues visibly using lifting cogged threads rather than monofilament threads, looking for the threads with definite lifting effects, we have come to have interests in other imported thread products after experiencing the EZ lift.

After experiencing various imported products, the author has come to use V-Loc, which is an I-shaped suturing thread with multiple cogs (Fig. 1.9).

V-Loc thread lifting is a lifting method using polytrimethylene carbonate (Maxon) material rather than PDO, the most commonly used material of absorbable threads, with the advantages of being not slippery like PDO, but softer and more resilient due to its material properties, facilitating the process of tying. It is also manageable and a clinician can feel more comfortable with pulling the threads. The number of cogs per unit length is larger than other existing threads, and the shape of the cog is not as sharp as the tip of the initial cogged threads, but rather made in the shape of the cogs of threads of the press type nowadays. As it is known that the dual-angle cogs allow the area of contact with the tissue to be widened and the threads to be more effectively fixed, it is suggested that there is no necessity to fix the thread on the side of the temporal head but rather fixing on the front of the hairline. The author has come to choose the method due to the advantages of no need for fixing the threads on the temporal region like U- or V-shaped long cogged threads (Fig. 1.10).

However, since there is a hook on one side and a needle on the other side due to its usage for suturing, when not using the hook part, there was an inconvenience of removing the hook part and then bundling the threads together to pull the tissue and fix it. Using a method of inserting a thread into the skin and soft tissues in a V-shape,

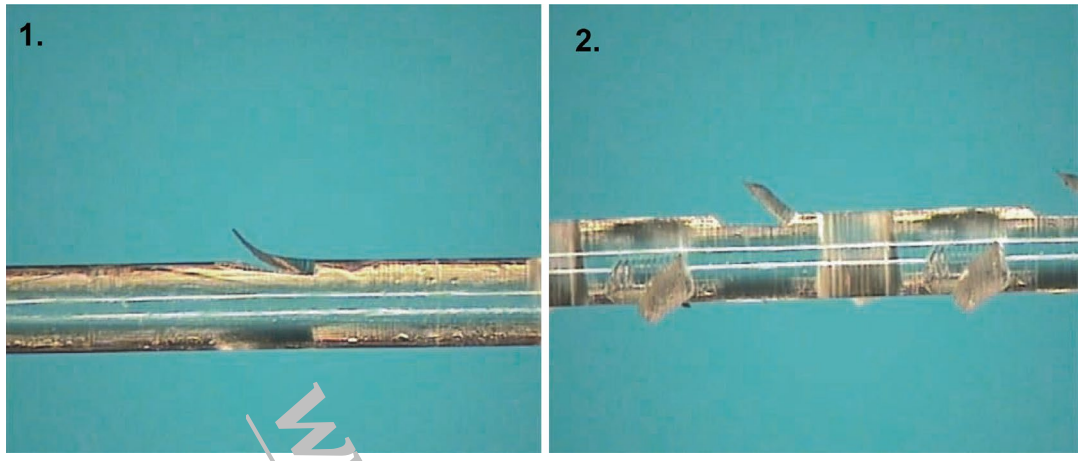

Fig. 1.10 (1) Single-angle cogs, (2) dual-angle cogs

pulling them together, and then tying them together, was used to lift tissue around the cheek and mouth, to improve the jowl of the mouth, and sharpen the jawline. Not only in elderly patients but also those who have relatively thin skin and want slimmer and taut faces, it was better to use the front of the hairline to pull the tissues rather than fixing threads in the temporal region which can cause headaches in patients.

In addition, due to the properties of the thread materials, the threads under the skin were not expected to only play the role of skin lifting but also to play the same role as reinforcing steel into the cement as if constructing the building. In addition, the procedure also has shown some effects of stimulating the skin and dermis broadly to promote the collagen production of the dermis, resulting in improved skin tone and elasticity after the thread lifting procedure, making the face more lifted and resilient. However, as the quality of the cogged threads that are integrated into the cannula produced in Korea has been improved, the demand for the thread lifting method of bundling the threads has gradually decreased.

There were some attempts of lifting tissues with other methods other than simple cogs. To make the fixation firmer and to extend the maintenance period, various products of nonabsorbable threads such as Tess, Ribbon, or Raise me up, which were fixed with a mesh in addition to

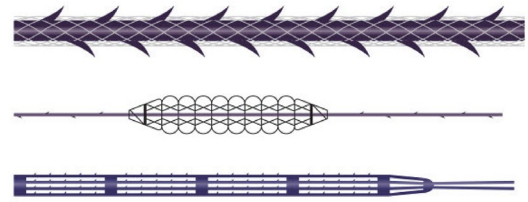

Fig. 1.11 Various types of lifting threads that combine cog and mesh

cogs on the deep temporal fascia were developed (Fig. 1.11).

An elongated cylinder-shaped mesh surrounding the thread is known to be able to maintain the lifting effect by strong adhesion created through the mesh even after the tensile strength of the cogs is eliminated. However, these products were not widely used despite their efficacy, because of the burden of invasion in the temporal region.

Also, another method of threading, bundling, and fixing the tissues with a silicone band, which was made as a rubber band rather than the general thread that easily breaks and once, the band gets loosened, the inserted area is incised and cut and lifting the drooped part again is possible. The lifting using a silicone band called M-sling has been developed by a domestic clinician and is still being used by some clinicians. It has been widely used as a material for vaginal molding and tightening in obstetrics and gynecology especially because of its elasticity. In recent years, Elastic

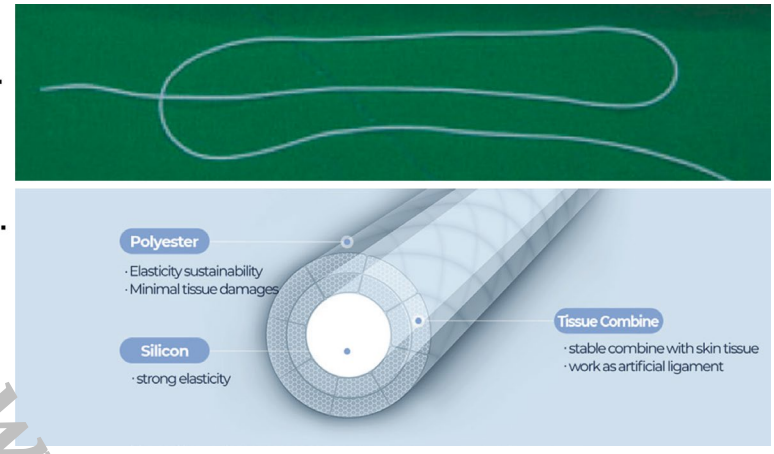

Fig. 1.12 (1) M-sling silicone band, (2) elasticum band

thread lifting using Elasticum, a nonabsorbable suture thread that is wrapped in a form of sheath by polyester weaving in the middle of a silicone monofilament, called Elasticum lifting, has been introduced and used in some clinics. It can be said that it is a lifting method using an elastic band with elasticity like M-sling (Fig. 1.12).

These methods commonly require a small incision to insert the materials due to difficulties in implanting with completely no incision, which is different from the basic method that we commonly use with nonincisional thread lifting. Of course, in thread lifting, a stab incision can be used to tie the thread to be fixed, but basically it is distinguished from normal nonincision thread lifting in that it requires a certain size of incision to manipulate the material. In addition, at first, the elasticity of the silicone band is good, so the pulling effect is strong, but since it is made of nonabsorbable material, some people may feel uncomfortable. In addition, if the elastic band fixing the tissue is tied too tightly, the tissue can be torn due to pulling force, and the possibility of inflammation or foreign body reaction over time is also higher than when using the suture-type cogged thread.

The histories of trends in lifting threads in Korea since its first introduction have been discussed above. Nowadays, since various kinds of lifting threads are manufactured and imported, instead of a certain type of thread being recommended suitable for lifting, it is preferable to select threads that meet the purpose of the procedure according to the overall condition of the patient, the operation site, and status of patient's skin and tissue.