

# INFORMATION ABOUT SILHOUETTE THREADS

## **Introduction:**

Surgeons have been searching for a way of achieving a satisfactory lift to the face and tightening of the neck by a less radical method than a traditional facelift. The concept of using threads underneath the skin, which have barbs inserted into them and which can therefore be used to hitch soft tissues upwards, has been available now in many different forms for the past 5 to 10 years. Some of the earlier designs were found to be defective and many have now been withdrawn from manufacture because they were either unreliable or caused technical problems which were sometimes difficult to sort out.

The latest of these lifting threads design has recently become available in Europe and is known as silhouette threads. It is an American design and seems to be much more reliable and longer lasting than other previous designs. However, it has only been used in significant numbers of patients for about 18 months although experiments in its use were going on for much longer than this but so far the published results have been very satisfactory for up to 18 months and it is hoped and expected that they are going to last a great deal longer than this.

## **Design of the Thread and Technique for Use:**

A very long thin needle is threaded with a 4/0 polypropylene suture. 10 knots are placed in the middle section of this thread with a gap of 1 cm between each knot. In-between each knot is a dissolvable plastic-like mini cone, like an ice-cream cone, which can slide in-between the knots and in fact cover the knot as it is being passed through the tissues. The knot, however, prevents the cone moving more than 1 cm and therefore the edges of the cone lock onto the fat and fibres in the soft tissue as soon as a reverse tug is put on the thread. This, therefore, acts rather like a fish hook which can pass in one direction but not the other.

Local anaesthetic is injected into the face for the operation in smallish quantities (because not much is needed). Local anaesthetic is injected into the scalp just behind the hairline in the upper temple and just behind the hairline behind the ear. Small amounts are injected close to the nasolabial fold (the bulge and furrow running from the nose down to the corner of the mouth). A similar amount is put into the underside of the neck just underneath the chin. A short cut is made in the scalp sufficient to be able to allow one to put a needle into the soft tissues of the temple and then down into the cheek, still allowing one to be able to tie the ends of the knot to tighten it up when it is being pulled upwards. The cut is, therefore, about 1½ cm to 2 cm long, ie just under an inch long. It usually leaves an inconspicuous mark later because the actual skin scar is under minimal tension. The needle is passed down first just above the deep temple fascia, then through the superficial temporal fascia at the level of the hairline and then in the subcutaneous tissues, ie the fat underneath the skin down into the cheek and the needle is taken out at points very carefully marked pre-operatively along the line of the nasolabial fold and horizontally across in a line which runs between the corner of the mouth and the earlobe. The line in which these threads are passed determines the axis or vector of pull on the soft tissues of the face and it has to be worked out very carefully in each patient to achieve the optimal effect. The passing of the needle into the cheek is usually completely painless and the most that the person is going to feel is the Surgeon pushing and squeezing the cheek skin from time to time as he guides the needle down through the correct layers.

The needle comes out through the skin at the nasolabial fold and once the Surgeon is confident that it is exercising just the right amount of pull on the cheek the needle is disconnected by cutting the stitch flush with the skin. At the top end the Surgeon then pulls the thread upwards and locks it into position by passing the thread through a small piece of plastic mesh which is stuck to the deep temporal fascia well underneath the outer 2 layers of the scalp in this location. The Surgeon has to judge the correct tension of pull so that the 2 sides of the face are evenly balanced.

It is common practice to use 4 threads to achieve a cheek lift in a woman and it usually takes 6 threads in a man. One might expect that the pulling up of the cheek skin would cause bunching of the skin towards the temple and, in fact, this does occur to a certain extent but the bunching usually flattens off within a few days. If there is excessive bunching then it means that the person has too much loose skin already and shouldn't really be having this kind of operation because it is not appropriate for them and they really ought to be having a facelift.

The neck can be tightened up and lifted in a manner very similar to that used for the cheek except that the cut to introduce the needle is made in the hairline behind the ears and the needle is passed downwards and forwards underneath the skin and above the layer of muscle in the neck (the platysma) so that the needle then comes out on either side of the middle of the neck. It is usual practice to bring the needle out about 2 finger's breadth away from the midline with one stitch at the level where one wants the neck to fold in future with one other stitch about 1 cm to 1½ cm below it. Thus, only 2 threads are used in the neck on either side as compared to 4 or 6 in the face.

In contrast to fixing the threads in the temple over a small piece of meshed plastic, there is no need to do this in the hairline behind the ear where the deep fascia is strong enough to support the pull of the polypropylene stitches.

After the operation is done, it is usually considered sensible to avoid too much facial movement to try and allow the sutures to bed in and solidify and get a grip on the tissues without risk of them tearing where they are locking on initially. Thus, some Surgeons apply tapes to the face more as a reminder to the patient not to move their face too much for the first 2 or 3 days although the tapes obviously can't stop a person from smiling or chewing but they provide a helpful reminder when the person is not thinking about what they are doing. For a similar reason, patients are advised not to bend their necks or turn their heads too vigorously for the first few days after the operation because if they turn their head very suddenly it may well pull on the threads too tightly underneath the skin and they will lose the locking on effect of the little cones.

### **Reasons for Choosing Silhouette Threads:**

This procedure seems to be very worthwhile in anyone of almost any age and either sex who has moderately elastic skin but who is beginning to notice the effects of gravity on their face and neck. It is not going to change the texture of the skin and it won't eliminate wrinkles but it will tend to smooth out the deep folds in the nasolabial area and reduce the so-called marionette line, which is the fold running down from the corner of the mouth towards the jaw and it will tend to reduce the obvious jowls at the jaw line. It will help to reduce, but not eliminate, laxity of the skin in the neck.

The method can be used together with other rejuvenating procedures, such as fat removal underneath the chin in the centre of the underside of the neck or fat injection which is often used to enhance the cheek fat pad and to give an appearance of a higher cheek prominence. It can be used in conjunction with a chemical peel and, if necessary, it can be used together with a modified or minimal access type face lift. It can be done at the same time as eyelid surgery under local anaesthetic or mole removal.

The main attraction of the technique is that it can provide a very rapid improvement to facial appearance without the need of the visible scars that go with the facelift and the patient can expect far less bruising than accompanies a facelift and there is usually minimal swelling and a much more rapid recovery than occurs with a face lift. Thus, on average, a patient will recover from silhouette threads within 3 to 5 days as opposed to a facelift which can take from 2 to 4 weeks to recover from. Most facelifts are done under general anaesthetic whereas silhouette threads are usually done under local anaesthetic.

There are some patients for whom it would be hazardous to carry out a full facelift. For example, patients who are very ill or who have cardiac complaints or who are very heavy smokers are not good candidates for a facelift under general anaesthetic and so silhouette threads might well be a worthwhile alternative.

### **Costs:**

It is estimated by most of the Surgeons doing silhouette thread work that the ultimate cost to the patient will be approximately half what they would expect to pay for a facelift. It is not sensible to give exact quotations here in this information sheet because the price of a facelift can vary from one hospital to another and of course will take account of extra procedures such as eyelid surgery or brow lifting which is often done at the same time as a facelift. The threads themselves are very expensive and so the price will depend on how many threads are used but it is unlikely that the use of silhouette threads in both sides of the face in a patient under local anaesthetic with some neck lift as well, is unlikely to cost less than £2,500.

### **Some Other Theoretical Considerations:**

The silhouette threads themselves do not dissolve because they are made of polypropylene but the little cones which slide in-between the knots and which are responsible for fixing a thread in position and lifting the cheeks or neck do dissolve over a period of about 6 to 8 months. It is thought that they lose most of their gripping strength within 4 to 5 months although it is quite probable that the gripping activity of the cones becomes of minimal importance after about 4 to 6 weeks because by then an internal scar will have formed around the cones and relieved the cones of their duty of lifting the tissues. Thus, if in theory one had to remove a thread it is quite possible that one could do this quite easily after 6 to 8 months and yet still retain the benefit of the pull. So far, there aren't any published cases of having to remove the threads but if it is found that the threads have been put in too tightly for whatever reason it would be a very simple matter to cut the threads where they are fixed in the temple or the scalp behind the ears and thus release any tension, but again this should be a very rare event.

## **Problems and Complications:**

### 1. Unrealistic Expectations

Patients who are hoping to get a facelift on the cheap will be disappointed by this procedure. The most they can hope for is a worthwhile improvement which is likely to last at least 18 months and probably much longer, but it certainly won't achieve the tight long lasting lift that is achieved by a facelift. There are plenty of patients, however, who only want a moderate lift for whom silhouette threads may well be just what they are looking for. However, it has to be emphasised that silhouette threads have only been available and used in large numbers of patients for about 18 months and so we simply don't know whether they are going to last much longer than this. In theory they should last a great deal longer than the previous generation of barbed threads because the gripping or locking onto the soft tissues covers a bigger cross sectional area than with the barbed threads (which only represent a tiny percentage of the area immediately around the thread).

Although the threads are strong, there have been a very small number of cases in which it is evident that they have broken but in one Surgeon's series, who had done this for 65 patients, he knew of only 3 threads breaking which means that only 3 out of about 7,000 threads had actually broken.

It is possible that the needle can puncture either an artery or a vein as it is being passed down from the temple area into the face. If it does pierce a vessel, it is very likely that the vessel will bleed and cause either a blood clot or simply some minor bruising. If a largish blood clot forms, then pressure will have to be applied to the area to stop the bleeding and to disperse the blood but it usually is not serious enough to have to abort the operation but simply will take up more time than average.

NB The operation usually takes between 45 and 60 minutes to complete.

The number of cases in which there have been troublesome bleeds is also very small (in the 2% or 3% incidence region) ie only 2% or 3% of patients have to have pressure applied to a bleeding point by the Surgeon although perhaps up to 5% may get some small bruises. If one looks at it more on the bright side it means that about 95% of patients are not going to get any significant bruising from this procedure.

In theory it is possible for the needle to injure a small nerve but no cases have been reported of any serious nerve injury as yet.

NB In theory both motor and sensory nerves could be damaged, ie nerves which are responsible for muscle movement and nerves responsible for feeling. From an understanding of the anatomy, the most likely nerve to be injured is a sensory nerve called the greater auricular nerve which runs up from the side of the neck towards the earlobe. It lies very superficially and if it was accidentally damaged this would result in some numbness in the region of the earlobe which is usually not serious.

The wounds in the scalp are usually closed in layers. The outer skin is closed with 3 or possibly 4 little staples which cause least harm to the hair follicles, and so the scars in the scalp usually are not a problem.

The wounds usually heal with only a narrow scar line and without disturbing hair growth, but of course there are always exceptions to this guideline rule and there are bound to be a few patients with a slightly wider or stretched scar in whom it might be worthwhile carrying out a scar revision if they are bothered about it. It should be emphasised that the wound closure is not done under tension because the skin is not being tightened and all the tension is being taken at a level much deeper than the skin and so the likelihood of a stretched scar in the scalp is a great deal smaller than occurs when one does a face lift in which the scar is under considerable tension in some instances.

Occasionally the bottom end of the silhouette thread lies rather close to the surface of the skin and can cause a mini puckering which isn't necessarily immediately apparent at the time of the operation. This can usually be sorted out very quickly and simply by some massage techniques which the Surgeon will need to do for the patient as soon as the puckering is apparent.

Infection in the wounds is fortunately exceedingly rare but it is normal practice to give all patients an injection of antibiotic at the time of the operation and to continue this for a further 5 days. It should be recalled that antibiotics can cause some patients tummy upsets, either because of allergy or because it changes their gut flora and can result in diarrhoea and it can occasionally result in thrush in women, but these problems can usually be sorted out fairly quickly and simply and without any detriment to the success of the operation.

I have not mentioned pain until now because fortunately it is not usually a problem. The patients should not experience pain except at the moment when the local anaesthetic is injected, which is always slightly uncomfortable unless they are very heavily sedated, but after that patients usually don't experience significant pain. As the local anaesthetic wears off some hours after the operation they may experience a throbbing aching sensation in the temples or in the back of the scalp behind the ear but this usually doesn't last long and can be controlled quite simply with Paracetamol. It is extremely rare for patients to complain of pain for more than a day or 2.

### **Summary:**

Silhouette thread technique is not a substitute for a facelift but will achieve some of the benefits associated with a facelift. It will certainly achieve a worthwhile improvement for most patients and is likely to last at least 18 months and probably a lot longer. It is certainly worth considering in patients who are unfit for facelifts. It is an operation which takes usually an hour or less to do and most patients can therefore tolerate it fairly easily although some may need some sedation to help them remain calm and rested during the procedure. Recovery from silhouette threads is rapid and it is rare to require any adjustment to the face or neck afterwards and most of the swelling will have disappeared within a few days.

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