Disclaimer

This movie is an educational resource only and should not be used to make a decision on Endoscopic Foreheadplasty or any facial surgery. All decisions about Endoscopic Foreheadplasty or any facial surgery must be made in conjunction with your surgeon or a licensed healthcare provider.
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INTRODUCTION

Endoscopic Foreheadplasty, also referred to as brow lift surgery, is a common facial rejuvenative procedure to combat the early signs of ageing. To learn more about this surgery, it is important to understand the muscles of the forehead.
Muscles of Forehead

Foreheadplasty, also referred to as brow lift surgery, is a common facial rejuvenative procedure to combat the early signs of ageing. To learn more about this surgery, it is important to understand the muscles of the forehead.

(Refer fig.1 & “a to d”)

Muscles of Forehead

- a. Frontalis muscle causes horizontal lines
- b. Corrugator muscles cause vertical lines to develop between the eyebrows
- c. Procerus muscle causes horizontal creases across the bridge line of the nose
- d. Depressor muscles cause medial ends of eyebrows to descend as well as vertical lines

(Refer fig.1 & “a to d”)
The Problem

The forehead-eyebrow area is probably the most important single feature in facial expression. When the brow is contracted and depressed medially, an angry threatening look results. When the lateral brow is depressed and fullness ensues in the upper eyelid, the eyes develop a tired, sad expression.

(Refer fig.2)

The forehead can develop horizontal lines. Between the eyebrows vertical lines can also develop as a sign of ageing. We live in a bright environment and every time we venture out into the sunlight we squint to help protect the eyes from the glare. This maneuver causes the eyebrows to contract.

It may also cause the eyebrow to be depressed over the eye, thereby shading it from the sunlight. As time goes by, these changes can become permanent. In combination with the effects of ageing and gravity, the eyes can assume a worried, tired or angry expression.

(Refer fig.3)

These various features of eyebrow descent (blepharoptosis) are often recognized by the patient as looseness and excess of the upper eyelid skin (blepharochalasis). In fact, in some cases, the looseness in the upper eyelid is the result of eyebrow descent and not simply due to excess eyelid skin.

This diagnostic difference can be tested by standing in front of the mirror and elevating the brow to its ideal position immediately above the lower border of the orbital rim and comparing it to the opposite side.

(Refer fig.4)
It is important to recognize, that in these cases, mere removal of excess skin from the eyelid will not restore the desired youthful expression to the eyes and eyelids. Foreheadplasty is the appropriate treatment for eyebrow descent.

Only when the eyebrows have been restored to the appropriate position can a decision be made about the amount of excess skin in the upper lid and the need for blepharoplasty.

(Refer fig.5)
Operation - 'Endoscopic' foreheadplasty

Foreheadplasty traditionally involves a long incision behind the hairline. Newer surgical techniques have been developed that minimize the incision length through the use of an endoscope. Endoscopy is minimally invasive surgery in which an endoscope, a small, soft, flexible tube with a light and video camera at the end, is inserted through tiny incisions to perform surgery.

The benefits of endoscopic Foreheadplasty compared to the alternative, open foreheadplasty, include:

- Smaller incisions
- Less trauma to nerves
- Less pain, numbness, and edema
- Faster healing time
- Less scarring
- Usually performed as outpatient day surgery

Several small incisions are placed at the junction of the forehead and hairline and the operation is performed using a small telescope and a television camera.

Up to five small incisions are made and the covering of the bone (periosteum) is elevated down to the level of the eyebrow. The diagram demonstrates this technique. Immediately above the eyebrows the periosteum (bone covering) is incised so that the brow becomes fully mobile.

(Refer fig.6)

The nerves to the scalp are visualized and protected and appropriate muscle modification is carried out. The brow can then be elevated. It is fixed in the ideal position either by sutures or minute screws inserted into the skull. These screws may be permanent or dissolvable over time.

Within one to two weeks, the periosteum becomes reattached in its new higher position. The realignment of the brow-elevating muscle will produce a lift, achieving a natural, pleasing result.

(Refer fig.7)
Advantages and Disadvantages of Open vs. Endoscopic Foreheadplasty

<table>
<thead>
<tr>
<th></th>
<th>Open</th>
<th>Endoscopic</th>
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<tbody>
<tr>
<td>Scar - Length</td>
<td>Long</td>
<td>Small</td>
</tr>
<tr>
<td>Scar - Quality</td>
<td>May Stretch</td>
<td>Barely visible</td>
</tr>
<tr>
<td>Hair loss</td>
<td>Infrequent</td>
<td>Rare</td>
</tr>
<tr>
<td>Numbness of scalp</td>
<td>More common</td>
<td>Less common</td>
</tr>
<tr>
<td>Post-op itching of forehead and scalp</td>
<td>Frequent - May last for many months</td>
<td>Infrequent</td>
</tr>
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(Fig. 8)

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<thead>
<tr>
<th></th>
<th>Open</th>
<th>Endoscopic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correction Achieved in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Very low brow</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>2. Deep glabellar lines</td>
<td>Excellent</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>3. Horizontal lines</td>
<td>Excellent</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>Elevation of hairline</td>
<td>Usual</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Post-op recovery</td>
<td>1-2 weeks</td>
<td>1 week</td>
</tr>
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(Fig. 9)

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<tr>
<th></th>
<th>Open</th>
<th>Endoscopic</th>
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<tr>
<td>Post-op bruising</td>
<td>Occurs</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Post-operative appearance</td>
<td>May give “startled” look immediately after operation</td>
<td>Most commonly natural</td>
</tr>
<tr>
<td>Recurrence of lines, wrinkles and brow ptosis</td>
<td>Rare</td>
<td>Uncommon</td>
</tr>
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(Fig. 10)
Ancillary Procedures

Although foreheadplasty is a common cosmetic surgery procedure, it is frequently combined with other procedures, either at the same time or at a later stage, to achieve an enhanced result:

Blepharoplasty:
Lower eyelid reduction may be necessary to improve the overall appearance of the eyes.

Face and Neck Lift:
These operations produce fresh facial features and improve the cheeks, jawline and neck contour.

Rhinoplasty:
Reshapes the nasal features

Skin Care Program:
Improves skin quality

Reshaping of the Bony Forehead:
May help to achieve an optimum cosmetic result.

Risks & Complications

Before you make a decision to undergo plastic surgery it is important that you be informed of the major risks and side effects of the surgery you are contemplating. While all care is taken to avoid or minimize these events, it must be recognized that complications may occur despite the best medical care. For this reason and in order that you may be properly informed prior to making your decision about surgery, it is important that you read and understand the relevant important risks.

The following pre-existing medical conditions make foreheadplasty slightly more risky. These include:

- Lack of sufficient tears (the dry-eye syndrome),
- high blood pressure or other circulatory disorders,
- clotting deficiencies in the blood,
- and a past history of eye conditions such as glaucoma or detached retina.

If you have any of the above, please bring it to your surgeon’s attention prior to surgery. If necessary a further opinion can be obtained and appropriate therapy instituted.
Scalp Numbness:
Loss of sensation in the anterior scalp and around the incisions is common after a foreheadplasty procedure. While sensation usually returns over a period of months, occasionally a partial deficit of feeling in the scalp or forehead may be permanent. Numbness in the middle of the forehead is usually mild even when the surgeon has resected the frowning muscles between the eyebrows.

Swelling:
This is usually worst in the first 72 hours following surgery and gradually settles over the following weeks. Some residual swelling may be present for up to six weeks and may be asymmetric depending on such factors as your favorite side of sleeping. In such cases, medical therapies such as ultrasound or lymphatic massage may be helpful. Swelling rarely persists in the longer term. It is usually intermittent and associated with your sleeping position.

Bruising:
This is maximal in the first 72 hours and initially may not even be apparent. However, as the forehead skin is relatively thick in comparison to eyelid skin, the bruising may drain downwards into the upper eyelids. This resolves over the ensuing ten days. If troublesome or persistent it can be camouflaged with makeup or dark glasses.

Post-Operative Pain:
As indicated earlier this is usually not severe. However it can be associated with headache. Oral medications are usually enough to control this pain, but if excessive, your surgeon should be notified early as this may indicate a complication such as bleeding under the scalp.

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Paraesthesia and Itching:
For up to several months after surgery, itching and abnormal sensations (paraesthesia) are common in the scalp and forehead. Persistent itching may cause problems in some patients who do not restrain themselves from scratching the scalp. Scratching can produce ulceration in the hair and hair loss. If the itching becomes severe, medication to reduce this may be necessary for a period of time.
Scarring:
Scars will result whenever an incision is made in the skin. This phenomenon is camouflaged by locating the incisions in the hairline. The great advantage of the endoscopic foreheadplasty is that the multiple incisions for surgical access are small, well orientated, heal rapidly and are barely visible.

When the skin is incised, the healing process will pass through a red, itchy and sometimes lumpy stage to become pale and soft. Incision lines may be visible in the hair, particularly when the hair is parted, although this is rarely a problem. In some cases the scar in the hair stretches and is more visible. In these cases revisional surgery will usually correct the problem.

Possible Complications

Frontal Hairline Alteration:
Conventional forehead lift, Open Foreheadplasty, requires an incision which runs across the top of the skull. This incision is usually placed within the hairline - about one to two inches back. The resultant scar is hidden, but the hairline is elevated as the forehead is stretched. Where the patient has a high hairline preoperatively - an alternate incision can be made precisely on the hairline.

This particular incision does not change the hairline (it may even be arranged to lower the hairline). But the scar may be obvious unless the hairstyle is designed to hide it. With endoscopic surgery - the incisions are placed in the hairline. However they are short and almost never leave visible scars. The mechanics of the operation usually result in significantly less alteration of the location of the hairline.

Hair Loss:
Temporary or permanent hair loss can occur after a foreheadplasty. Some of the hair follicles in the flap may enter a resting phase presumably due to tension or suturing. This can produce temporary thinning of the hair. However, over the next two to three months in most cases the hair will return. Occasionally small areas of permanent hair loss can occur, particularly around the incision lines. In these cases a small corrective procedure may be useful in removing the non-hair bearing scalp.

Forehead Lag:
The nerves to the elevator muscles of the forehead are potentially at risk during forehead surgery. These fine nerves may be stretched as the forehead is elevated or moved. If this occurs, temporary paralysis of the forehead occurs. Although this removes the forehead wrinkles, it also removes animation of the forehead. This temporary paralysis (called "neuropraxia") will recover in days to weeks.

Occasionally these filamentous nerve fibers may be severely damaged and paralysis of the forehead can be permanent. Although quite uncommon, this is a surgical complication which must be contemplated by any patient undergoing forehead surgery.
Skin Necrosis:
Small areas of skin death have been reported following foreheadplasty surgery. If this complication were to occur, the area is usually within the hair bearing scalp and minor corrective surgery will usually eradicate the problem.

Lagophthalmus:
This term describes an inability to fully close the eyes. This problem has been reported following brow lifting, but is almost invariably confined to patients who have had their upper eyelid skin removed in a blepharoplasty prior to seeking advice about foreheadplasty. It is important to advise your surgeon if you have had previous eyelid surgery, particularly where upper eyelid skin has been removed. The potential problem resulting from lagophthalmus is risk to the eye from corneal exposure, particularly while you sleep. By forewarning your surgeon of previous eyelid surgery, the problem can be dealt with in a variety of ways.

Changes of Facial Expression:
Occasionally after elevation of the eyebrows and particularly where excessive swelling has occurred, the patient's facial expression may change. As the swelling settles, the skin of the forehead gradually assumes a natural position. However it is occasionally necessary to perform small adjustments three to six months after the original operation to achieve an optimal result.

Asymmetry:
Most faces are asymmetrical to a lesser or greater extent. Where asymmetry is identified adjustments can be attempted at the time of operation. Correction of these asymmetries may not be completely achievable. Rather than considering this as a complication, minor asymmetries should be considered as a variant of a normal interesting face.
Disclaimer
Although every effort is made to educate you on Endoscopic Foreheadplasty and take control, there will specific information that will not be discussed. Talk to Your Doctor or health care provider about any concerns you have about Endoscopic Foreheadplasty.
Endoscopic Foreheadplasty
Multimedia Health Education

YOUR SURGERY DATE

READ YOUR BOOK AND MATERIAL

VIEW YOUR VIDEO /CD / DVD / WEBSITE

PRE - HABILITATION

ARRANGE FOR BLOOD

MEDICAL CHECK UP

ADVANCE MEDICAL DIRECTIVE

PRE - ADMISSION TESTING

FAMILY SUPPORT REVIEW

Physician’s Name: ____________ Patient’s Name: ____________
Physician’s Signature: ____________ Patient’s Signature: ____________
Date: ____________ Date: ____________