EYEBROW AND FOREHEAD LIFT

TOC
EYE AND FACE

Information Series

OCULOFACIAL PLASTIC SURGERY

Oculofacial Plastic or Ophthalmic Plastic Surgery is a surgical subspecialty of Ophthalmology that seeks to improve physical appearance and function, or minimize disfigurement resulting from accidents, disease, or birth defects. The word plastic comes from the Greek meaning "molding" or "giving form".

EYEBROW AND FOREHEAD LIFT

The brow lift is an operation to elevate the eyebrows and restore them to a more normal position. A brow lift is often performed in conjunction with *blepharoplasty*, an operation to remove excess skin and fat from the upper or lower lids. At the time of brow lifting the forehead can also be smoothed and elevated through the very incisions used for the lift. There are a variety of techniques available to raise the eyebrows and forehead.

This brochure covers those techniques as well as other information regarding brow and forehead lifting surgery.

PREOPERATIVE CONSIDERATIONS

When considering blepharoplasty surgery it is important to keep in mind the important relationship among the forehead, eyebrows, and upper eyelids. The brows, like the eyes, are very important human facial features; both are vital to non-verbal communication and in conveying expression when conversing with others. Perfectly positioned and properly shaped eyebrows convey an open, friendly look. Sagging brows, on the other hand, can give a tired look and send unintended signals, such as anger, fatigue, non-interest, or unfriendliness. Therefore, eyebrow position is very important in human interaction.

As humans age, the effects of gravity begin to show in many places. The brows and forehead are no exception. The changes, particularly at first, may be subtle and unnoticed. Frequently, the sagging brows

push the eyelid skin towards the eye. The "extra skin" of the eyelid is often a sign of a sagging forehead or brow. Forehead decent can also lead to heavy, redundant skin in the area of the glabella at the root of the nose. Many patients arrive in the office seeking an eyelid lift when the real problem that needs correction is a droopy forehead and sagging brows. Early changes may be difficult to recognize. Later it becomes obvious that the sagging forehead as wel as the eyelids are contributing to the excess tissue in the upper eyelids. Blepharoplasty combined with brow or forehead surgery provides a very effective correction in such cases.

ANATOMIC CONSIDERATIONS

To fully understand the important relationship between the brows and eyelids, it is necessary to review the anatomy of the forehead and brows. The normal eyebrow rests just above the ridge of bone called the orbital rim. The elasticity of the forehead skin and the tone of a major muscle of the forehead, the frontalis muscle, hold the eyebrows in that position (Fig. 1, A). The frontalis is a muscle everyone is familiar with because it wrinkles the forehead and raises the eyebrows as it contracts. The frontalis muscle is attached to the brows, where it mingles with several other muscles that lower the brow. The first is the orbicularis oculi muscle (Fig. 1, B), the major muscle of the eyelids that allows blinking, gentle eyelid closure, and squeezing of the eyelids during eyelids during forced closure. Next are two small but powerful muscles that draw the eyebrows together just above the nose and pull the central portions of the

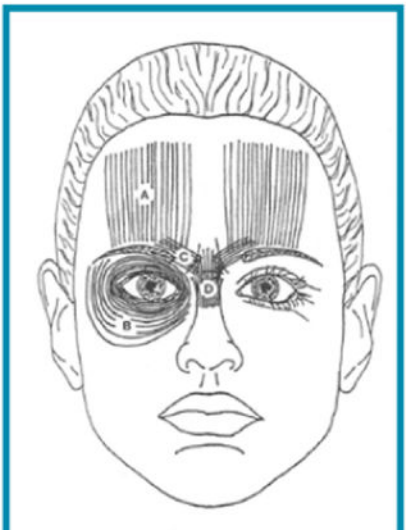


Fig. 1, A-D

eyebrow down towards the tip of nose, as when scowling or frowning. These two muscles, the corrugator supercilii (Fig. 1, C) and the procerus muscle (Fig. 1, D) are important muscles because they oppose the frontalis muscle and force the eyebrows downward as they contract.

With time, the action of the procerus and corrugator muscles coupled with the effects of gravity and the general aging process cause the eyebrows and forehead to sag or droop. The end result is termed brow and forehead ptosis. When the brow droops, it pushes the skin and soft tissues of the upper eyelid towards the eye. The crowding of the upper eyelid simulates excess skin and fatty tissue of the upper eyelid. Correction requires elevation of the eyebrow, not removal of upper eyelid tissue. At times, both may be required. Descent and crowding is also observed in the area of the glabella at the root of the nose. A forehead lift elevates both the brows and this redundant, sagging tissue of the glabella and can reduce the appearance of the deep vertical wrinkles in this area.

TRADITIONAL EYEBROW LIFT PROCEDURES

Eyebrow and forehead lifting has been performed through many incision sites. In milder cases of brow ptosis the brows can be elevated and stabilized at the orbital rim through an internal approach via the upper eyelid blepharoplasty incision, avoiding a separate incision. However, for more severe brow ptosis, and when visual blockage is the only concern, incisions can be placed directly over the eyebrows (Fig. 2, A). This procedure is very effective and provides longlasting results. Unfortunately, the incision is visible. For this reason other incisions may be chosen to better hide the scar. Three alternative sites are available: a long skin crease (wrinkle) in the middle of the forehead (Fig. 2, B), a curved incision directly in front of the hairline (Fig. 2, C), or an incision across the top of the scalp, about an inch behind the hairline (Fig. 2, D). In the latter situation up to one quarter of an inch of hair must be

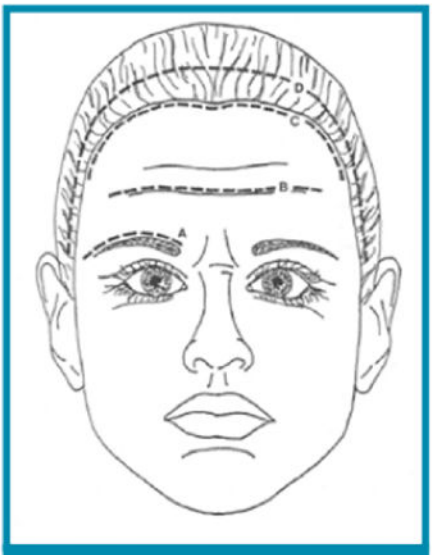


Fig. 2, A-D

sacrificed, a noteworthy detriment for patients with a receding hairline, thin hair, or long foreheads. While these are cosmetically pleasing incisions, they are long and bothersome to some patients. In addition, slight loss of sensation of the skin of the forehead or scalp persists in most patients long after the surgery is complete. This is an additional nuisance and distinct disadvantage of these more "traditional" brow and forehead lifting procedures.

THE ENDOCOPIC BROW AND FOREHEAD (ENDOBROW) LIFT

At TOC Eye and Face we have used all these incisions and find them useful in some situations. In cases where we are looking to elevate both the brows and forehead as one unit, while using small, hidden incisions we usually perform an endoscopic forehead lift or endobrow.

The endoscopic forehead lift or endobrow procedure is desirable because a large incision is avoided and hair is not removed. Access to the forehead and brow is gained through small vertical and horizontal incisions placed in the scalp, well away from the brow, and easily hidden behind the hairline (Fig. 3). The vertical incisions do not interfere with nerve function, therefore any change in sensation is transitory and usually disappears with time. Since large incisions are avoided, the procedure is less for patients to go through, the recovery is quicker, and less bruising than with traditional brow lifting procedures. The endobrow procedure is

accomplished by means of special surgical instruments, a viewing television monitor and an endoscope; similar to the telescope used for abdominal and orthopedic procedures. The instruments are introduced through small incisions well away from the eyebrows. The instruments are used to elevate the skin of the forehead and brow away from the forehead bone (Fig. 4). The dissection proceeds so as to free the entire forehead skin and frontalis muscle from the underlying bone (Fig 5). The surgeon observes his instruments on the television monitor during this dissection. Once free from the bone, the skin and muscles of the eyebrow and forehead can be "lifted" or pulled towards the top of the head (Fig. 6).

Fig. 3

At this point the forehead must be supported so it will heal in the proper, elevated position. This is most often accomplished by placing two tiny, absorbable Endotine® Forehead fixation devices in the outer portion of the forehead bone. The Endotine fixation devices are superficial and small. Placing the Endotine is akin to drilling a tooth to place a dental filling. The Endotine

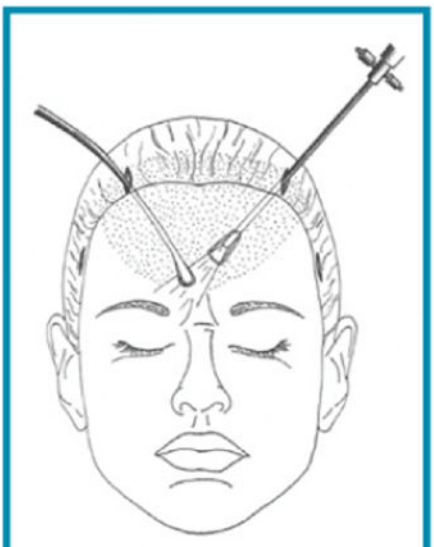


Fig. 4

fixation device provides multiple points of contact with the elevated forehead tissue in order to create a more even and gentle distribution of lift (Fig. 7). The Endotine is bioabsorbable and disappears within six to twelve months. Other means of fixating the forehead, such as drilling a small tunnel in the bone for passing a fixation suture, may be more appropriate in certain cases. Your surgeon will explain which type of fixation technique is most suitable for you. At the conclusion of the forehead lift, the scalp incisions are closed with skin staples or sutures (Fig. 8). Upper and lower eyelid surgery, laser resurfacing, or other procedures can then be accomplished if necessary.

Fig. 5

We perform endoscopic forehead lifting surgery in our on-site ambulatory surgery center, the Center for Aesthetic and Reconstructive Eyelid and Orbital Surgery (CAREOS). This state-of-the-art, certified outpatient surgical facility was designed for your safety, convenience and comfort. It is run by our dedicated and professional nursing staff.

Fig. 7

Surgery proceeds with the patient under local anesthesia with intravenous sedation provided

by a board certified anesthesiologist. The forehead surgery takes about one hour. If simultaneous eyelid surgery or laser skin resurfacing is planned, additional time is necessary. Our goal is to provide the best possible care in a safe and comfortable environment.

Fig. 8

CONCLUSION

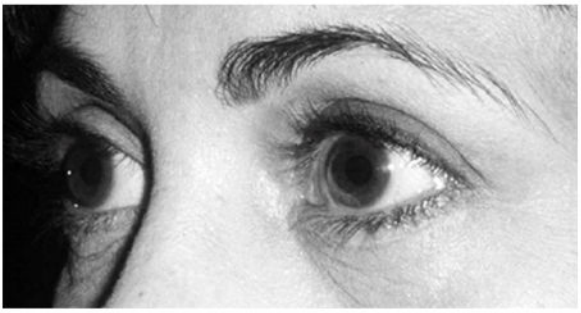
It is important to assess the position and function of the forehead and eyebrow when considering eyelid surgery. Only a minority of patients will require forehead surgery, but it is important not to overlook the important role of the brows in the appearance and function of the upper eyelids. While results vary from patient to patient, the effect of forehead lifting can be dramatic (Fig. 9, a & b, and Fig. 10, a & b). Since forehead lifting is often combined with eyelid surgery, we strongly suggest you review two associated TOC brochures, Blepharoplasty and Eyelid Ptosis.

Before surgery

After endoscopic forehead lifting surgery

This brochure is intended as an introduction to brow and forehead lifting surgery. It may not cover every aspect of your condition or address all questions you may have. For more information visit our websites at **www.toceyeandface.com** and **www.tocmedicalspa.com** or call to schedule an appointment with one of our TOC surgeons.c

Before surgery



After endoscopic forehead lifting surgery

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OTHER BROCHURES AVAILABLE IN THE TOC INFORMATION SERIES

Upper Blepharoplasty
Entropion
Ectropion
Eyelid Ptosis
Tearing and Tear Duct Obstruction

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