Periorbital Rejuvenation Surgery in the Geriatric Population

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SUMMARY

Periorbital aging is an unavoidable, progressive process that is often accompanied by visual obscurations and ocular discomfort. With surgical correction, patients may benefit not only functionally but also psychosocially when an aesthetic outcome is obtained. The periorbital anatomical structures in elderly patients are complex and interlocking, requiring a thorough evaluation and systematic approach. Most elderly patients are reluctant to undergo procedures that require prolonged surgical and recovery times if they think it is only for cosmetic improvement. We review contemporary periorbital surgical methods suitable for a geriatric population, namely procedures that are low-cost, low-risk, with short operative and recovery times, and that have excellent patient acceptability. It is feasible to select procedures that can be customized to the needs of the elderly. [International Journal of Gerontology 2010; 4(3): 107–114]

Key Words: blepharoplasty, blepharoptosis, elderly, fat repositioning with midface lift

Introduction

Periorbital aging is a relentless and unavoidable process that inevitably progresses over time. The elderly are commonly subject to both the cosmetic and functional effects of aging around the eyes. While this condition does not impose imminent physical danger, it may have various psychosocial and functional effects. The eyes are a person's most noticeable feature. Knoll and colleagues[1] found that one's appearance alters the way others perceive that individual's mood. Common impressions associated with periorbital aging are that the person looks tired, sad, disgusted, or angry. However, beyond simply affecting appearance, severe laxness of tissue around the eyes may actually obscure vision and cause ocular discomfort. These are the main reasons patients request periorbital surgery. They can be encouraged to expect functional, cosmetic and psychosocial benefit from the procedure.

Displacement and redundancy of the periorbital structures in elderly patients are more complex and interrelated than in younger people. When a periorbital aesthetic procedure in an old person is considered, all anatomic components contributing to the region must be evaluated. A thorough understanding of the pertinent anatomy is a prerequisite for designing the surgical approach and determining the outcome. It is especially important to choose techniques suited to the target population. Most elderly patients are not interested in a complicated surgical procedure for periocular rejuvenation, particularly if it is painful and requires a prolonged recovery. We reviewed contemporary periorbital surgical methods to identify procedures that are low-cost, low-risk, have short operative and recovery times, and are well accepted by patients. With a combination of the methods we currently use, it is possible to select procedures that can be customized to the needs

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of the elderly. Our discussion will specifically target the Asian geriatric population, mostly of Chinese descent, who comprise the majority of our patients.

Signs of Periorbital Aging

The signs of periorbital aging include upper and lower lid deformities. The upper lid abnormalities include dermatochalasis, eyelid ptosis (or blepharoptosis), brow ptosis, and upper lid skin hooding. The lower lid counterparts consist of eyelid bag formation, tear-trough deformity, entropion, and ectropion.

Dermatochalasis is defined as laxity of the skin. Eyelid ptosis in the elderly results from dehiscence of the levator aponeurosis from its original tarsal insertion or from fatty degeneration of the levator muscle. Brow ptosis is usually a sign of detachment of the footing of the eyebrow from the underlying periosteum. Upper lid skin hooding refers to heavy sagging of the eyebrow and displacement of the eyelid margin, giving a hooded appearance to the eye, especially the outer half to outer third. The severity of upper lid hooding is mostly determined by the degree of dermatochalasis and brow ptosis, while the presence of upper lid ptosis may further aggravate it.

Lower lid bag and tear-trough deformity are present in all older people to varying degrees. Gravity, exertion (as in heavy lifting), and medical conditions (such as allergies and diseases of kidney, heart, liver and thyroid) facilitate its development[2,3]. Lower lid entropion and ectropion are less common, but they are more likely to cause actual discomfort.

Pertinent Anatomical Considerations

Focusing on any single problem in the periorbital region is not sufficient when treating the elderly. The position of the eyebrow must be assessed. Otherwise, surgery on the upper lid may result in the eyebrow being pulled down, leaving an inadequate brow-to-lid distance, which gives a sad appearance. Removing only redundant fat tissue from a lower lid fat bag while disregarding the presence of a tear-trough deformity and midface drooping may yield a hollow orbital appearance, resulting in a senile and wasted look. Considering the entire periorbital anatomy is thus essential for designing an appropriate procedure.

Gravity plays an important role in the aging process, pulling everything in the face downward, albeit at different rates. Loosened structures with minimal underlying attachments such as the areolar layer of the scalp, fat pads, and the skin are the first to descend. Muscles with varying degrees of contraction, tensile strength, and attachment to the periosteum are affected next. The most long-lasting structures are the ligaments, the skin to which they are attached, and underlying tissues fixed to the periosteum. These tend to hold other structures in compartments, resulting in a lumpy appearance with aging. Given these features of the aging structures, reconstruction must be planned from the top down, putting things back in position in an orderly fashion. It is important to avoid unnecessary or premature procedures that may contribute to subsequent worsening of the appearance.

Eyebrow ptosis

Aging of the scalp and the underlying muscles is responsible for descent of the eyebrow. The frontalis muscle, originating in the galea aponeurotica and inserting into the skin of the eyebrow and nose, is responsible for elevation of the eyebrow, usually more centrally than temporally. The corrugator supercilii muscle, which originates in the periosteum of the nasal root and inserts into the skin of the medial eyebrow, depresses the medial brow. The areolar layer of the scalp is a loose structure sandwiched between the subcutaneous tissue and galea aponeurotica. With age, the weight of the forehead and periorbital skin and contracture of the corrugators supercilii exert downward forces, causing the forehead skin to glide over the loosened areolar layer. This effect is exacerbated as the counteracting upward force of the frontalis muscle weakens over time. The net downward vector forces result in descent of the eyebrows.

Blepharoptosis

The first sign of senile blepharoptosis is broadening of the lid crease. The patient usually presents with a sunken eye and a half-asleep appearance due to narrowing of the eyelid fissure. Occasionally, blepharoptosis is severe enough to obscure the superior visual field, forcing the patient to adopt a chin-up posture in order to see clearly[2]. Levator muscle function is usually intact (>8 mm)[2], but the distance from the eyelid margin to the pupillary light reflex decreases and may differ between the two eyes[3]. Ptosis may also result from anterior segment ophthalmologic procedures commonly