Facial Plastic Surgery in the Geriatric Population

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KEYWORDS

• Aging face • Facial rejuvenation • Brow-ptosis • Dermatochalasis • Jowls

KEY POINTS

- Geriatric facial rejuvenation is an elective procedure that requires a thorough preoperative assessment to circumvent perioperative complications.
- Facial aging is an inevitable process that largely results from soft tissue descent and volumetric deflation.
- A comprehensive knowledge of the aging process and precise assessment of the exact pathologies yielding the patient's appearance is essential to produce the best cosmetic outcome.
- In the aging population, minimally invasive procedures alone are often insufficient to address the excessive skin laxity. A combination of surgical and nonsurgical interventions often yields the best cosmetic result.
- The aging face must be evaluated as a whole to reduce the unnatural appearance seen when regions are addressed independently.

INTRODUCTION

Greater life expectancy with advancements in technology and medicine has lead to a growing interest in management of the aging process. In particular, concern with facial rejuvenation has dramatically expanded in both the medical and societal realms. The face is vital to the idea of beauty and plays a principle role in human perception with studies showing that attractive people make more money and are considered more "able" by employers. With the growing geriatric population, the media's portrayal of elegant aging and ideal image, the advent of social media, and the reduction of stigma surrounding cosmetic surgery, the pursuit of youthful appearance for personal and professional reasons has become the cornerstone in the fastest growing medical sector.[1,2]

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Preoperative Evaluation

First and foremost, the surgeon must appreciate the elective nature of facial rejuvenation, because many of the techniques require a trip to the operating room and general anesthesia. During the initial surgical evaluation, it is important to be cognizant of patient's comorbidities, functional status, and medications. Preoperative assessment and medical clearance by a primary care physician is often necessary as well as preoperative anesthesia consultation and possible cardiology clearance in higher risk patients.

The Aging Process

A comprehensive knowledge of the aging process and precise assessment of the exact pathologies yielding the patient's appearance is essential to achieve the best cosmetic outcome. Facial aging is an inevitable process that largely results from soft tissue descent and volumetric deflation. The main elements of facial anatomy are skin, muscles, ligaments, fat, and the bony skeleton. During the aging process, skin becomes inelastic, coarse, saggy, and dyschromic. Diffuse lipoatrophy causes facial hollowing and the potential laxity of facial retaining ligaments allows for descent or pseudoherniation of atrophied fat pads, making orbital and nasolabial fat pads as well as jowls more prominent.[3,4] Mimetic muscles undergo sarcopenia and increase in tone to near maximal contracture character contributing to wrinkle formation. Further, the facial skeleton undergoes heterogeneous reabsorption. Regions with strong predisposition for resorption include the midface, the superomedial and inferolateral orbital rim, the prejowl area of the mandible, and the alveolar ridges.[5–7] This bony resorption contributes to prominent upper lid medial fat pads, deepening of the nasojugal groove, flat and hollowed cheeks, and deepening of the geniomandibular groove exaggerating jowl appearance.[8] The facial plastic surgeon must keep in mind that, in addition to tightening and resurfacing procedures, cosmetic outcomes might improve when volumetric reduction is addressed.[5,9]

Skin

Aging skin is one of the primary characteristics of the aging face and must be addressed as a part of comprehensive facial rejuvenation. Senescent skin changes occur owing to both intrinsic and extrinsic aging. Intrinsic aging occurs when proliferation slows and the number of epidermal cells decrease.[10] Collagen, elastic fibers, and glycosaminoglycans, particularly hyaluronic acid, are reduced secondary to decreased synthesis and a slight increase in degradatory matrix metalloproteinases.[11] Together, these processes can result in fine static rhytids and inelastic, thin-appearing skin that may exaggerate dynamic wrinkling. However, the most dramatic effects are secondary to extrinsic factors, such as ultraviolet radiation and smoking. In extrinsic aging, photoaging secondary to ultraviolet radiation is the largest culprit. Shorter wavelength ultraviolet B light primarily penetrates the epidermis to elicit keratinocytic and melanocytic damage, while longer wavelength ultraviolet A light penetrates into the dermis. Photoaging leads to a profound dermal collagen decrease and degradation as well as elastosis—dermal accumulation of disorganized elastic fibers and glycosaminoglycans.[11] These effects lead to exaggerated static rhytids, deep furrows, elastosis with thickened, sallow, coarse-appearing skin, telangiectasias, and areas of dyschromia.

In managing senescent skin changes, the prevention of extrinsic damage plays a crucial role. Long-term medical therapy with topical medications is vital in the management and prevention of aging skin. Topical retinoids improve the appearance of mild to moderate photodamage (fine to course wrinkles, roughness, pigmentation) through the regulation of gene expression to increase procollagen.[12] Hydroxyl acids