

CHAPTER 20

INJECTABLES, LASERS, PEELS & NON-INVASIVE PROCEDURES

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I. INJECTABLES

A. Soft Tissue Fillers

1. Autologous
 - a. Fat
 - b. Dermafat grafts
 - c. Fascial grafts (ie - fascia lata)
2. Homologous
 - a. Alloderm®
 - i. acellular dermal graft is derived from skin obtained from tissue banks
 - ii. can be micronized
3. Synthetic
 - a. Radiesse™
 - i. microspheres of calcium hydroxylapatite-based implant
 - ii. stimulate natural collagen growth, actually causing new tissue development
 - iii. is also useful in the treatment of facial lipoatrophy (a stigmatizing effect of HIV), vocal cord deficiencies, oral and maxillofacial defects, as well as scars and chin dimples
 - b. Hyaluronic acid-most commonly used fillers today
 - i. G prime (or G')-related to a fillers "hardness"; the smoother the product is to inject the lower the G'
 - ii. Restylane™-many different formulations
 - iii. Juvederm™-many different formulations
 - iv. Perlane™-larger particle size
 - v. Belotero™-low-viscosity
 - vi. Can be broken down with hyaluronidase
 - vii. Common treatment areas include nasolabial folds, lips, cheek/malar area, temples, lower eyelids
 - viii. Typically last 6-15 months
 - c. Sculptra™
 - i. Poly-L lactic acid
 - ii. FDA approved for HIV-related lipodystrophy

B. Neurotoxin

1. Botox™
2. Dysport™
3. Xeomin™
4. All work by preventing the binding and release of acetylcholine at the neuromuscular junction

5. Duration of action 4-6 months
6. FDA approved for glabellar wrinkles and crow's feet

II. LASERS

- A. Produce heat in target tissue (chromophore) in the skin
- B. Used to improve facial wrinkles and irregular skin surfaces
 1. In many cases, facial wrinkles form in localized areas, such as near the eyes or around the mouth. The depth of laser of treatment can be tightly controlled so that specific areas are targeted as desired
 2. When healing is complete, the skin has a more youthful appearance
- C. Can be ablative or nonablative
- D. Ablative lasers
 1. CO₂
 - a. Target chromophore is water
 - b. Cause deeper thermal injury
 - c. 8-10 day recovery period
 - d. Can cause hypopigmentation
 2. Fractionated CO₂
 - a. Delivers pulse in spaced pixilated pattern
 3. Erbium:YAG
 - a. Shorter wavelength than CO₂
 - b. Target chromophore is water
 - c. Less thermal diffusion
 - d. Shorter recover time (5-6 days)
- E. Non-ablative lasers
 1. Fractional resurfacing
 - a. Blue dye on skin is target chromophore
 - b. Required multiple treatments
 - c. 1-2 day downtime
 2. ND-YAG
 - a. Non-specific target
 - b. No epidermal ablation; targets the dermis

III. PEELS

- A. Chemical peel is especially useful for the fine wrinkles on the cheeks, forehead and around the eyes, and the vertical wrinkles around the mouth
- B. The chemical solution can be applied to the entire face or to a specific area – for example around the mouth – sometimes in conjunction with a facelift
- C. At the end of the peel, various dressings or ointments may be applied to the treated area
- D. A protective crust may be allowed to form over the new skin. When it's removed, the skin underneath will be bright pink

- E. After healing, the skin is lighter in color, tighter, smoother, younger looking
- F. Superficial peels include: salicylic acid, Jessner's solution, and glycolic acid
- G. Moderate peels include: TCA peels
- H. Deep peels include: Hetter's formula, Baker-Gordon peel

IV. OTHER NON-INVASIVE MODALITIES

- A. Dermabrasion
 - 1. The surgeon removes the top layers of the skin using an electrically operated instrument with a rough wire brush or diamond impregnated burr
 - 2. Typical downtime 7-10 days
- B. Microdermabrasion
 - 1. Suction-based device that removes debris and dead skin
 - 2. Minimal downtime
- C. Thermage
 - 1. Used to tighten skin laxity
 - 2. Uses periodic radiofrequency and cooling
 - 3. Results are more modest
- D. Ultherapy
 - 1. Focused ultrasound treatment
 - 2. Energy given in pulses
 - 3. Multiple treatments required
 - 4. Results are more modest
 - 5. Cryotherapy (i.e. Coolsculpting™) Heat-based Therapy (i.e. Vanquish™) and Ultrasound based Therapy (Ultrashape Power Plus™)
 - a. Use focused areas of cooling or heating to target subcutaneous fat
 - b. Typically requires several treatments
 - c. Minimal downtime
 - d. Much less dramatic results compared to surgery (29% Fat Reduction)

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