Dermabrasion, Chemical Peels, and Acne Surgery AHM

Clinical Indications

- **Dermabrasion** using the conventional method of controlled surgical scraping (dermaplaning) or carbon dioxide (CO₂) laser for removal of superficial basal cell carcinomas and pre-cancerous actinic keratoses is considered medically necessary when all of the following criteria are met:
  - Conventional methods of removal such as cryotherapy, curettage, and excision, are impractical due to the number and distribution of the lesions
  - The patient has failed a trial of 5-fluorouracil (5-FU) (Efudex) or imiquimod (Aldara), unless contraindicated.

- Medium and deep **chemical peels** for actinic keratoses and other pre-malignant skin lesions are considered medically necessary when all of the following criteria are met:
  - Patient has 15 or more lesions, such that it becomes impractical to treat each lesion individually
  - Patient has failed to adequately respond to treatment with topical 5-FU or imiquimod, unless contraindicated.

- **Acne Surgery** such as marsupialization, opening or removal of multiple milia, comedones, cysts, pustules is considered medically necessary for the treatment of acne.

- **Intralesional injection of steroid** is considered medically necessary for the treatment of inflammatory nodulo-cystic acne.

Indications Considered Not Medically Necessary

- Dermabrasion for scar revision is considered cosmetic. Note: Exceptions to the cosmetic surgery exclusion may apply to revision of scars. Please check benefit plan descriptions.
- Dermabrasion for removal of acne scars is considered cosmetic. Dermabrasion and microdermabrasion are considered experimental and investigational in treating active acne because it has been shown to increase inflammation associated with active acne.
- Dermabrasion and microdermabrasion is considered experimental and investigational because its effectiveness for other indications has not been established. For example, dermabrasion and microdermabrasion is considered experimental and investigational for the treatment of dyschromias, keloids, melasma, and vitiligo.
• Chemical peels are considered not medically necessary for the treatment of non-malignant (simple) lesions.
• Chemical peels for active acne are considered experimental and investigational because they have not been shown to be effective for that indication.
• Chemical peels for acne scarring, melasma, skin wrinkling or lentigines are considered cosmetic.
• Chemical peels are considered experimental and investigational for all other indications because their effectiveness for indications other than the ones listed above has not been established.
• Cryoslush therapy (solid CO₂ mixed with acetone) and liquid nitrogen therapy are considered experimental and investigational for acne because their effectiveness for this indication has not been established.
• Intralesional steroid injection is considered experimental and investigational for other types of acne (e.g., acne conglobate, acne fulminans, and pyoderma faciale; not an all-inclusive list)

Evidence Summary

Background

• Dermabrasion is a dermatologic procedure that exerts its therapeutic effect by removing the epidermis and superficial dermis, allowing re-epithelialization from the underlying skin to occur. Therefore, the technique is best used for superficial lesions of the face (Fitzpatrick et al, 1993).
• Standard dermabrasion uses a wire brush or diamond fraise (a stainless steel wheel on which diamond chips have been bonded) abraders to plane the skin whereas laser dermabrasion involves use of the argon laser, ultrapulse carbon dioxide (CO₂) laser, or flashlamp-pumped pulsed dye laser to resurface the entire face, and has been used as an alternative to standard dermabrasion in treating patients with inactive acne with disfiguring scarring (Wheeland, 1995; Alster and McMeckin, 1996; Alster and West, 1996; Ruback and Schoenrock, 1997; Aronsson et al, 1997; Fulton, 1996). Manufacturers of lasers cleared by the Food and Drug Administration for general skin resurfacing include Laser Industries, Coherent, Tissue Technologies, and Heraeus Surgical.
• Dermabrasion is contraindicated in patients with active acne, as it may exacerbate skin inflammation (AAD, 1994; Arnold et al, 1990). Acne is active when inflammation is present, and is treated with oral and topical antibiotics and retinoids (e.g., isotretinoin (Accutane) or retinoic acid (Retin-A). Dermabrasion conducted within 6 months of isotretinoin treatment has been associated with increased scarring (Fitzpatrick et al, 1993; AAD, 1994). Coverage is not provided for dermabrasion for inactive acne (such as in removal of scars from chronic cystic acne) as dermabrasion is considered a cosmetic procedure for this indication.
• Because of a lack of evidence of safety and effectiveness, dermabrasion of active acne is considered investigational. Dermabrasion for post-acne scarring is considered a cosmetic
In an evidence-based review on microdermabrasion, Karimipour and colleagues (2009) stated that the role of microdermabrasion in the treatment of dyschromias and acne vulgaris is limited.

In an observational study, Garg and colleagues (2011) evaluated the usefulness of a less-painful method of repigmentation of vitiligo patches. A total of 40 vitiligo patches in 22 consecutive patients with resistant vitiligo were treated with microdermabrasion followed by topical 5 % 5-FU. One-third of the patches showed more than 50 % re-pigmentation, and 1/4 showed more than 75 % re-pigmentation. Gratifying results were obtained in 7 patches after 1 session. The authors concluded that microdermabrasion is adjunctive with topical 5 % 5-FU in the treatment of resistant vitiligo patches. They stated that further well-controlled randomized trials are needed to validate the observations of the study.

Chemical peels can be classified according to the type of "wounding" agent used and targeted depth of exfoliation (i.e., superficial, medium, deep). Chemicals most often used in superficial peels are: 10 to 35 % trichloroacetic acid (TCA), resorcin, Jessner's solution, Retin-A, 5-FU, azelaic acid and alpha hydroxy acids (glycolic and lactic acid). For medium peels 50 % TCA is used or lower concentrations of TCA in combination with Jessner's solution, 5-FU or carbon dioxide cryotherapy. Baker's phenol or a 50 to 70 % solution of TCA are used for deep peels. There is a paucity of data in the literature which compares the effectiveness of the various chemicals used in chemical peels.

Chemical peeling is a long-standing and accepted dermatologic technique. However, clinical studies comparing the various types of chemical peels, and comparing chemical peels to other forms of therapy are unavailable. The main coverage issue regarding the technique is the determination of whether the chemical peel is primarily cosmetic in nature. Actinic keratoses are pre-malignant lesions and the medical necessity for their destruction/removal is not questioned. However, a chemical peel for the treatment of actinic keratoses would only be appropriate when there are numerous lesions, making treatment of the individual lesions impractical. For example, Morganroth and Leffell (1993) suggested that patients with less than 10 actinic keratoses should be treated with cryotherapy.

Additionally, curative treatment of actinic keratoses requires a full thickness necrosis of the epidermis. Brodland (1988) estimated that this depth of necrosis would be unlikely with concentrations of TCA less than 35 %. Therefore, coverage requests for superficial chemical peels as a treatment of actinic keratoses may actually represent primarily cosmetic procedures and should be carefully evaluated.

Superficial chemical peels with alpha-hydroxy acids, so called fruit acids which include glycolic acid and lactic acid, have been used for the treatment of acne. While low concentrations of glycolic acid can be administered by the patient at home, higher concentrations (50 to 70 %) are administered in the office.

Guidelines from the American Academy of Dermatology (AAD) observe that both glycolic acid-based and salicylic acid-based peeling preparations have been used in the treatment of acne (Strauss et al, 2007). The guidelines state: "There is very little evidence from clinical trials published in the peer-reviewed literature supporting the efficacy of peeling regimens. Further research on the use of peeling in the treatment of acne needs to
be conducted in order to establish best practices for this modality."

- Dreno and associates (2011) examined the evidence that supports the widespread use of superficial peels in the treatment of acne and acne-prone oily skin. A search of the English language medical literature was performed to identify clinical trials that formally evaluated the use of chemical peeling in active acne. Search of the literature revealed very few clinical trials of peels in acne (n = 13); a majority of these trials included small numbers of patients, were not controlled and were open label. The evidence that is available does support the use of chemical peels in acne as all trials had generally favorable results despite differences in assessments, treatment regimens and patient populations. Notably, no studies of chemical peels have used an acne medication as a comparator. As not every publication specified whether or not concomitant acne medications were allowed, it is hard to evaluate clearly how many of the studies evaluated the effect of peeling alone. This may be appropriate, however, given that few clinicians would use superficial chemical peels as the sole treatment for acne except in rare instances where a patient could not tolerate other treatment modalities. The authors concluded that in the future, further study is needed to determine the best use of chemical peels in this indication.

- The AAD found limited evidence published in peer-reviewed medical literature that addresses the efficacy of comedo removal for the treatment of acne, despite its long-standing clinical use (Strauss et al, 2007). The guidelines concluded, however, that "[i]t is the opinion of the work group that comedo removal may be helpful in the management of comedones resistant to other therapies. Also, while it cannot affect the clinical course of the disease, it can improve the patient’s appearance, which may positively impact compliance with the treatment program."

- The guidelines make no mention of the use of liquid nitrogen or cryoslush in the treatment of acne (Strauss et al, 2007).

- Levine and Rasmussen (1983) evaluated the effectiveness of intralesional injections of corticosteroids in the therapy for nodulo-cystic acne. Triamcinolone acetonide at a concentration of 0.63 mg/ml was as effective as a higher concentration of 2.5 mg/ml. Betamethasone phosphate had little, if any, effect on nodulo-cystic acne lesions at concentrations of 3.0, 1.5, and 0.75 mg/ml, when compared with saline controls. Mahajan and colleagues (2003) compared the effectiveness of intralesional triamcinolone with that of a combination of intralesional lincomycin and intralesional triamcinolone in nodulo-cystic acne. A total of 10 patients of nodulo-cystic were injected with intralesional triamcinolone acetonide (2.5 mg/ml), while 9 patients were given lincomycin hydrochloride (75 mg/ml) in addition to the intralesional triamcinolone. They were followed-up 48 hours, 1 week and 1 month later. At 1 week, 7 patients (70 %) treated with injection triamcinolone showed 66 % improvement, whereas all 9 (100 %) patients treated with lincomycin and triamcinolone showed 100 % improvement that was stable at 1 month. The authors concluded that a combination of intralesional triamcinolone and lincomycin is superior to intralesional triamcinolone alone in the treatment of nodulo-cystic lesions of acne.

- The AAD’s “Guidelines of care for acne vulgaris management” (Strauss et al, 2007) noted that intralesional corticosteroid injections are effective in the treatment of individual acne
nodules; there is limited evidence regarding the benefit of physical modalities including glycolic acid peels and salicylic acid peels. The guideline stated that “In the opinion of experts, the effect of intralesional injection with corticosteroids is a well-established and recognized treatment for large inflammatory lesions. It has been found that patients receiving intralesional steroids for the treatment of cystic acne improved. Systemic absorption of steroids may occur. Adrenal suppression was observed in one study. The injection of intralesional steroids may be associated with local atrophy. Lowering the concentration and/or volume of steroid utilized may minimize these complications”.

- An UpToDate review on “Light-based, adjunctive, and other therapies for acne vulgaris” (Dover and Batra, 2013) states that “Intralesional glucocorticoids are a treatment option for nodular acne lesions that might otherwise take weeks to resolve. Treated lesions typically flatten in 48 to 72 hours, improving appearance and discomfort. Triamcinolone acetonide, in concentrations of 1.25 to 2.5 mg/ml, is typically injected using a 30 gauge needle. There is no high quality evidence demonstrating the efficacy of such injections, but extensive clinical experience supports their use. Lower concentrations of triamcinolone may be as effective as higher concentrations and may reduce the risk of adverse effects; in one small randomized trial, lesions treated with 0.63, 1.25, or 2.5 mg/ml of triamcinolone acetonide exhibited similar improvement scores. Patients should be cautioned regarding potential side effects including cutaneous atrophy, hypopigmentation, and telangiectasias”.

References:


CPT Codes / HCPCS Codes
15780, 15781, 15782, 15783, 15789, 15793, 10040, 11900, 11901, J3301