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The Lost Art of Chemical Peeling

My Fifteen Year Experience with Croton Oil Peel

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Keywords

• Laser skin resurfacing • Chemical peels • Dermabrasion • Croton oil • Phenol

Key points

- Croton oil peels can peel as deeply as any other means of facial resurfacing and can be used to achieve remarkable results.
- Unlike ''phenol'' peels, which were originally thought to be ''all or nothing,'' the croton oil concentration can be varied, allowing different facial areas to be peeled to different depths.
- Croton oil peels result in less down time, less redness, and fewer complications than other techniques for a similar depth achieved.
- Indications for croton oil peels include facial rhytids, uneven pigmentation, adjunct treatment in transconjunctival lower blepharoplasties and festoons, acne scars, and nonmelanoma skin cancer prophylaxis.
- Unlike lasers, croton oil peels can be performed with little cost to the provider.

INTRODUCTION

Chemical peels have been around for a very long time. Ancient Egyptian women developed the technique of applying sour milk to their faces, the first use of lactic acid (an alpha-hydroxy acid) peels for skin rejuvenation [1]. The ancient Romans applied grape juice to their faces, developing the use of tartaric acid as a chemical peel procedure. This practice continued for hundreds of years, leading to the development of other fruit acid chemical peels.

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Phenol peels were used as early as 1903 for acne scarring and as acceptable treatment for gunpowder burns of the face during World War I. The techniques of that war were brought to the United States, and lay peeling centers were established shortly after in South Florida and in Los Angeles, California [1]. The benefits of this treatment were brought to medical doctors by Brown and colleagues and Litton around 1960 [2,3], followed shortly after by the publication of the easily mixed Baker-Gordon formula [4].

Over the last 2 decades, the techniques available in modern medicine for facial peeling have grown exponentially while the patient's desires for beautiful and youthful-appearing skin remain unchanged. Dermatologists have led the charge in most of these advances, while ophthalmologists, facial plastic surgeons, and plastic surgeons sit mainly on the sidelines, having little exposure during their training to the decision-making processes involved in selecting appropriate techniques of facial skin rejuvenation for any given patient. Some lucky residents and fellows may be exposed to the use of a particular laser by a particular surgeon at a particular surgery center, but facial rejuvenation considerations based on skin type, skin color, age, desired results, and the current condition of the skin and its location on the face are rarely discussed and even more rarely taught. The purpose of this article is to address some of these omissions within the ophthalmic community.

In the early 1990s, I was introduced to trichloroacetic acid (TCA) peels, then to carbon dioxide and erbium YAG laser resurfacing, and then to the "phenol" peel. For various reasons, I soon grew dissatisfied with each of these resurfacing techniques and quickly adapted the croton oil peel as my main means of performing facial resurfacing shortly after the publication of Gregory Hetter's work in 2000 [5–8].

The easily mixed "phenol" peel formula published around 1960 had 4 components: phenol, septisol, croton oil, and water, but it was the phenol that was thought to be the active ingredient. Hetter adjusted the proportions of these ingredients and concluded that the croton oil, and not the phenol, was the actual peeling agent. Croton oil peels, as these peels came to be known, use the same 4 ingredients, including phenol but in different proportions from the classic Baker-Gordon peeling formula. Hetter published his 5 easily mixed "Heresy Formulas" in 2000, and I began using 4 of these 5 formulas in my private practice shortly after their publication (Fig. 1) [8].

For 15 years, I have performed croton oil peels for a growing list of indications, and the purpose of this article is to disseminate the usefulness of this technique and the pearls that I have learned through experience to as wide an audience within the ophthalmic community as possible (Fig. 2).

EVALUATION

Any ophthalmologist or other physician who is interested in encouraging patients to improve their skin aesthetically should have some knowledge of both skin anatomy and skin classification. The skin has 3 layers, the epidermis, the dermis (separated into the more superficial papillary and the deeper