Dermatological Cryosurgery and Cryotherapy

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Editors

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Preface

In dermatologic cryotherapy and cryosurgery, localized cold is used to improve some skin conditions or destroy and remove abnormal tissue. It utilizes cryogens to treat various benign non-cancerous, pre-cancerous, and cancerous lesions.

The advantages of cryosurgery include high success rates, few side effects of significance, relatively short recovery times, ease of performance, and reasonable cost. The disadvantages include frequent morbidity, lack of accurate margin of destruction control, and operator dependency.

Solid scientific grounds nowadays support the indications for cryosurgical and cryotherapeutic procedures, starting with understanding the mechanisms of action, the cellular and vascular events that occur during the processes of cooling and freezing, thawing and recovery, and ending with the statistical evidence of cure or relief.

This book is titled *Cryosurgery and Cryotherapy for Skin Diseases and Conditions* because in this way we address from the start semantic issues with the word cryotherapy, which we consider to be misused interchangeably with cryosurgery. For our purpose, the term "cryosurgery" is used to denote a primarily destructive procedure involving temperature reduction (such as for skin cancer), while "cryotherapy" is used to denote a therapeutic procedure where the tissues are taken to low temperature but are expected to survive (such as in pain reduction). A terminology compromise was accepted for those procedures where mechanisms of action where destruction and the involvement of immunity overlapped. We often respected the choice of words by the chapter authors.

An example of cryosurgery is the treatment of epithelial skin neoplasms by lowering them to temperatures that selectively destroy the cancer cells within them, while their surrounding tissue is spared lethal damage. Examples of cryotherapy include lowering skin temperature to induce anesthesia, preserving a severed finger for reattachment, or cooling a wart for a few seconds just to induce an immune response that hopefully will get rid of it.

It was 3 years ago that Mr. Grant Weston from Springer Publishers approached me after my almost yearly lecture on cutaneous cryosurgery at an Annual Meeting of the American Academy of Dermatology to suggest that I write the "definitive textbook" on the subject. That year another textbook (albeit not the definitive) on the same topic was just published, so I felt that the timing was suboptimal; the seed had been placed in nourishing ground. For the daunting task, it was tremendously gratifying to obtain the support of

luminaries like Gloria Graham, MD; Renata Strumia, MD; and Yaron Har-Shai, MD, who became my co-editors.

Gloria needs no introduction in the world of dermatology, and she is without a doubt the Doyenne of Cryosurgery, having written many articles, edited textbooks, lectured innumerable times all over the world, treated many, and mentored a large cadre of practitioners of the trade. Dr. Graham kept motivating us by example; although she struggled with health issues, she never quit pressing us to edit and her many friends in the field to contribute.

Renata was introduced to me by Grant. He suggested that I read a book on cryosurgery she had just published in Italian. Dr. Strumia wrote that book pretty much all by herself, and it was very much to my liking. I contacted her, met her at congresses, learned firsthand of her competence, and asked her to join us as editor and contributor; she did so with remarkable eagerness and efficiency.

Yaron's name I kept running into while reviewing cryosurgery on PubMed; Dr. Har-Shai is a plastic surgeon in Israel who has a keen interest in the reduction of keloids and has developed innovative techniques. He was also a most efficient deliverer of contributions to our text, and he helped us recruiting erudite authors for several chapters. I would also want to give a special thanks to Dr. Robert Schwartz for his help in the final stretch of this book. He dedicated a lot of his time and his team's effort to complete chapters for which we had difficulties finding willing contributors.

I am in great debt to my co-editors for their efforts and collaboration. They all actively participated in the development of the content, wrote a great number of the chapters, and helped me greatly in the selection of contributors of the highest quality, expertise, and recognition in their respective fields.

Finally, I must acknowledge the valuable participation and intense dedication and efforts of the team Alba Quiñones, MD (from Dermatology Treatment and Research Center) and Michael D. Sova (Developmental Editor for Springer Science) to whom this text owes its crystallization.

Hopefully the readers will find this book to be of value, as complete as possible, and enjoyable to read; it may not be the "definitive textbook" on the subject, but hopefully that is because the field continues to expand and progress.

Dallas, TX, USA William Abramovits

Contents

Part XIV The Future of Cryosurgery

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