
Plastic and Reconstructive Surgery of Burns

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Plastic and Reconstructive Surgery of Burns

An Atlas of New Techniques and Strategies

 Springer

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Preface

*For I neither received it from man, nor was I taught it,
but I received it through a revelation of Jesus Christ.
(Galatians 1:12)*

In the early 1970s, the first ever 55-bed inpatient Department of Plastic and Reconstructive Surgery opened in the A. V. Vishnevsky Institute of Surgery at the Russian Academy of Science in Moscow, Russia. Being a main referral burn center in Russia, we had an opportunity to operate on thousands of burn patients and we came to the conclusion that more research was needed to develop more effective surgical techniques, especially for severely burned patients. Over the years, we studied the anatomical features of patients with burn complications and developed multiple advanced surgical methods to treat scar deformities of skin and soft tissues, especially postburn contractures of joints and other body areas.

With divine help and revelations from the Creator, the anatomical structure of scar contractures was successfully studied, which led to the development of new methods for the surgical treatment of burns that significantly improved outcomes for the surgical rehabilitation of burned patients.

Some of the most significant results of this research include:

- A direct anatomical cause of contractures was established: for most patients, it is a scar surface deficit of a trapezoid shape. This determines the trapezoid shape of the flap necessary to compensate for the surface deficit.
- Research of the anatomy of the contractures led to a new classification of all contractures: *Edge*, *medial*, and *total* contractures, independent of their location and severity.
- Based on the anatomical research, a more effective trapezoid-flap plasty surgical method was developed, which yields superior results for edge- and medial-type contractures (85% of all the contractures seen in clinical settings).
- New methods of surgical treatments of face and neck deformities were developed due to the identification of axial blood supply to the skin of the neck. Various surgical techniques using split cervico-thoracic flaps were offered for the reconstruction of burned face tissue and contractures of the neck with great results.
- Very important work was done in restoring function of the burned hand (syndactyly, finger contractures, tendinopathies, and arthropathies due to burns). Use of trapezoid-flap plasty for contractures along with mechanical traction devices and tendon transplantation can return function to many disabled patients.
- An effective new method for the reconstruction of the shape, position, and skin of the burned breast was developed.
- We developed a new treatment method for severe adduction contractures of the shoulders based on the use of axillary island skin or scar tissue in the form of a subcutaneous pedicle flap in combination with skin transplantation.
- Sural flap with proximal base was developed and helped resolve the problem with ulcers and skin defects in the Achilles tendon area.

We invite you to expand your knowledge and learn new approaches to burn treatment based on a three-dimensional understanding of tissue deficit and excess. Our extensive experience demonstrated that most contractures can be successfully and completely eliminated without re-contracture as long as the surface/tissue deficit is fully compensated. The first two chapters explain the anatomy of contracture surface deficit and classification based on the location of the scar fold and tissue surplus in relation to joint surfaces. Understanding these principles will enable surgeons to apply recommended surgical techniques to a variety of burn contractures regardless of location and severity.

Many of the surgical procedures described in this atlas provide detailed planning, marking, and step-by-step surgical details, supported by pictures, schemes, and illustrations. We challenge you to step out of the comfort zone of triangular flaps and try your first Y-shaped radial incision to see an additional 30% release of the contracture and the appearance of a trapezoid wound requiring a trapezoid flap. Once you perform your first successful trapezoid-flap plasty, there will be no going back to triangular flaps for most contractures encountered in your practice.

The authors wish success to all surgeons using surgical techniques presented in this atlas. We want to see better outcomes and happy, thankful patients filled with gratitude to God and to the surgeons who offered them help.

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