Integrated Surgical Debulking Combined with Laser and Radiotherapy (SLCR) for Complex Keloids

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Keloids with massive hypertrophy, often complicated by infection, sinus tract formation, and inward folding of normal skin, present a significant treatment challenge. Complete excision of large lesions can create extensive wounds, increase tension, and raise recurrence risk. To address this, we propose a one-stage integrated approach combining surgical debulking, infection control, fractional laser therapy, and postoperative radiotherapy, referred to as the "Blade and Beam" strategy (SLCR). The procedure begins with surgical thinning to reduce keloid bulk while preserving healthy dermal tissue. Infected and necrotic tissue is excised, and normal skin is carefully released. Unlike conventional excision, this method emphasizes structural reshaping without excessive tension, minimizing recurrence risk. The addition of fractional laser therapy in the same session serves two key functions: it vaporizes excess tissue to further reduce volume and enhances tissue sensitivity to radiotherapy. This delayed healing increases fibroblast responsiveness, enhancing the effects of subsequent radiotherapy, which helps suppress fibroproliferation and prevent recurrence. This one-stage approach offers improved infection control, better aesthetic outcomes, and reduced recurrence compared to staged or single-modality treatments. We have successfully applied this method to treat numerous large, refractory keloids with excellent results. In this presentation, we will share our experience with the "Blade and Beam" strategy, demonstrating its effectiveness in treating severe keloids and its potential as a comprehensive solution for complex cases.