



Craniofacial Keloid Management Using Post-Excisional Adjuvant Brachytherapy: A Case Report

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INTRODUCTION

- Keloids are fibroproliferative scars with excess outgrowth of skin beyond the area of the original wound
- Negative psychological impact associated with higher rates of depression, anxiety, and negative self-perception

Noninvasive treatment approach:

- Intralesional corticosteroids
- Laser therapy
- Silicone gel sheets

Surgical indication:

- Scar resistant to conservative approaches
- Recurrent infection, bleeding, or pain

+/- Adjuvant therapies:

- Intralesional 5-FU (wound dehiscence, poor healing, dyspigmentation, graft compromise)
- Betamethasone (pain, skin atrophy, skin dyspigmentation, telangiectasia)
- Brachytherapy: (Considered safe with low overall complication)
- Localized radiation after excision using temporary catheters placed in surgical site (low vs. high dose)
- MOA: local inhibition of fibroblast proliferation through radiation induced DNA damage, stunting angiogenesis

CASE PRESENTATION

Middle-aged male with pmh DM, HTN, HLD, tobacco use presented with a chronic craniofacial keloid involving the face and anterior neck, refractory to steroids and prior excisions, with recurrent pain, infections and bleeding. Management consisted of **surgical excision, split thickness skin graft, and adjuvant brachytherapy** applied to wound margins in 2023. The patient was followed for graft take, wound healing, keloid recurrence, and patient satisfaction for short term and long term follow up (2025).

FIGURE 1: HIGH CRANIOFACIAL KELOID BURDEN



FIGURE 2: NO EVIDENCE OF RECURRENCE AT TWO YEARS



TECHNIQUE

- 35 cm keloid resected from anterior neck
- Split thickness graft harvested from anterior thigh (450 sq cm) to area of resection
- Tunneled brachytherapy catheters placed to anterior neck around areas of wound margin
- Administered adjuvant radiation therapy at 600cGy to 0.5 cm depth per fracture, for three fractions for a total dose of 1800cGy post operatively.

BRACHYTHERAPY: A VALUABLE ADJUNCT

- Brachytherapy can be an effective adjunct treatment following excision of keloid scars, with no evidence of long-term recurrence
- Lower overall complications vs. other adjuvant therapies
- Post operative outcomes were highly favorable
- Early post operative period: delayed wound healing at periphery. Required PT to assist with jaw mobility
- 2-year follow up: jaw mobility back at baseline and reported high patient subjective satisfaction

REFERENCES

