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THINKING OUTSIDE THE LINEAR
Summary of three published papers

- “Yin-Yang” graft
  - Accepted for publication in Dermatologic Surgery
- Thenar flap
  - Accepted for publication in Dermatologic Surgery
- Cautionary tale of double rhombics
  - Submitted and under review in the Journal of Cutaneous and Aesthetic Surgery
"Yin-Yang" graft: A simple technique for maximal tissue conservation and minimal donor site defects.

- One of the concerns when considering a graft is the creation of a large donor site defect. It is ideal to minimize excess wasted tissue, such as large standing cone deformities, when closing the defect.

- While other mathematical approaches for devising the size of skin grafts have been employed, they often incorporate complicated calculations that cannot be easily done at the patient’s bedside.¹

- Our method suggests a simplified calculation that minimizes both the size of the donor defect, as well as the amount of tissue discarded.
Methods

- Patients with large, circular surgical defects were selected.
- Full thickness grafts were measured by dividing the defect width by two and doubling the length.
- The graft was then transected at a 45 degree angle and excised.
- Excess subcutaneous fat was trimmed prior to placement.
Mathematical sketch

Figure 1.1

Figure 1.2

Figure 1.3

Figure 1.4

Figure 1.5

Figure 1.6
The two pieces of graft were then placed in a “yin-yang” pattern over the defect site and were sutured into place with 5-0 fast gut.

A bolster was then sutured overlying the graft and the donor site was primarily closed.

Bolsters were removed at 1-2 weeks depending on location.
Discussion/Conclusion

- Large defects repaired with grafts often require large donor defects.

- Our method provides maximum tissue conservation and minimizes donor site defects.

- Easy bedside calculation compared to previous attempts to maximize efficiency
Conclusion

- In our experience, this method tends to be most beneficial when dealing with defects greater than 3cm in diameter.

- The final cosmetic outcome should be taken into consideration when using this approach as it will create an additional “S” shaped line in the center of the healed graft.

- Physicians and patients can expect smaller donor site defects, cosmetically favorable scars, and fewer potential complications.
Case 2 – Thenar Flap

- Squamous cell carcinoma is the most common malignant tumor of the hand however, SCCIS of the nail bed and periungual region is uncommon.

- Repair of distal fingertips is difficult and often associated with complications due to decreased vascularity and lack of adjacent tissue for reconstruction.

- Thenar flaps are a common method of repair in acute fingertip amputations, however they are rarely utilized in dermatology.
Our case...

- A 64 year old female presented with previously diagnosed SCC of the periungual left middle finger.

- She admitted to smoking 2-3 packs per day for most of her adult life. Poor candidate for grafting.

- Mohs surgery was performed and revealed extensive nail bed involvement.

- After clearing the margins, several repair options were discussed, including a thenar flap.
Case 3 – Cautionary Tale of Double Rhombics

- A variety of techniques are utilized in dermatologic surgery to repair post surgical defects. The cosmetic outcome of these techniques, as well as tissue conservation, aids the surgeon in determining the appropriate technique.

- The rhombic flap is a frequently employed method of closure that provides maximal tissue conservation and can be utilized in both large and small defects.
Our case...

- A 95 year old World War II Air Force veteran presented for Mohs surgery on two morpheaform basal cell carcinomas located on the left anterior and posterior jawline.

- The post-operative size of each defect was 1.8 x 2.0 cm. Several methods for repairing the defect were discussed with the patient.

- A linear closure would have required extensive use of burrow’s triangles if oriented along the jawline and a significant deviation of his oral commissure if oriented vertically.

- The patient declined the option of a full thickness skin graft and requested a minimal amount of undermining, which precluded the use of a large rotational flap.
Time to get creative..

- We elected to perform double rhombic flaps, using jowl skin as the reservoir for the anterior lesion and preauricular skin as the reservoir for the posterior lesion. The tissue underlying the proximal defect contained a large seborrheic keratosis and thus was not used as a reservoir.

- The option of connecting to two defects was discussed prior to performing the repair. After visualizing the shape of the final outcome the two rhombic flaps were left separate, as connecting the two would have created a “swastika” like design.
Conclusion...

- Think outside the linear closure.
- Learn the correct techniques and then improvise.
- Avoid the stigma of a “one trick pony”
- Plan out your closures to completion before making your first cut.