Ideas and Innovations

A New Skin Suture Technique for Multiple Z-Plasty

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Multiple Z-plasty is a very effective therapeutic procedure for contractures, keloids, and hypertrophic scars, but there is a drawback in skin suture of Z-plasty in that it is complicated and time-consuming when compared with skin suture of linear wounds. Furthermore, suture removal in multiple Z-plasty requires much time and is very painful to the patient. In children in particular, body movement cannot be avoided during suture removal, making it a depressing task to the surgeon.

I therefore developed a new skin suture technique that not only reduces the operative time of multiple Z-plasty but also facilitates suture removal. This technique will be presented herein.

**Operative Technique**

Following incision of multiple Z-plasty, deep absorbable sutures are applied to prevent wound stretching. The tip of the flap on one side is fixed on the opposite side by continuous locking suture (Fig. 1, A, and Fig. 2, center). In addition, the tip of the flap on the opposite side is also fixed similarly by continuous locking suture (see Fig. 1, B). All the Z-plasty flaps are ganged together with a single suture, much like hanging clothes out on a clothesline. Several of these "clotheslines" are used in order to achieve both closure and proper orientation of the Z-plasty flaps relative to one another. These sutures are used parallel to one another and are

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**Fig. 1.** New skin suture technique for multiple Z-plasties. Continuous locking suture is made in the order of A • B, C, D • E. These five sutures are used parallel to one another and locked at points where each crosses a portion of the incision.

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multiple Z-plasty is commonly applied in the treatment not only of contractures but also of keloids and hypertrophic scars. There are several types of continuous sutures for linear wounds, but only interrupted sutures are available for multiple Z-plasties. Thus, in skin suture of multiple Z-plasty there is no alternative for the surgeon but to engage in the primitive task of suturing the long wound. In multiple Z-plasty, suture removal is also a very complicated and annoying task for the surgeon. Furthermore, in the case of multiple Z-plasties in children, suture removal becomes so troublesome and annoying to the surgeon that he or she even considers suture removal under general anesthesia.

Therefore, a new skin suture technique was developed that reduces the time required for skin suture and suture removal in multiple Z-plasty. In this technique, the wound is closed with continuous suture without any use of interrupted suture, and thus the operative time is reduced and suture removal is greatly facilitated to alleviate pain and discomfort on the part of the patient. Furthermore, there is no possibility of causing ischemia in these small flaps by crossing them with parallel sutures at multiple levels.

**SUMMARY**

A new skin suture technique was developed for multiple Z-plasty. In this technique, the wound of multiple Z-plasty is closed by several continuous locking sutures. With use of this technique, the operative time is reduced, and suture removal is facilitated to alleviate pain and discomfort on the part of the patient.

**REFERENCES**