A reminder of the Z-plasty technique

**History**
Denovillers first described the Z-plasty technique in 1856, followed by Morestin. Lindesberg provided mathematical principles.

**Principles**
Two triangular flaps with opposed bases are performed from the central line. If free, the upper triangle takes the place of the lower triangle and conversely. All flaps have the same length, with a 60° angle after their transposition. The scar is thus lengthened.

**Z-plasty technique**
* Step one (Fig. 1)

![Fig. 1 - Step one.](image)

Draw a line passing by the scar. From this line, draw two incisions the same length as the main line, with an angle of 60°.

* Step two
With a scalpel number 15, perform an incision perpendicular to the drawn line as far as the subcutaneous fatty tissue.

* Step three
Using a hook retractor, two subhypodermic triangular flaps are made with a scalpel 15.

* Step four
After transposing and reversing the flaps, suture the shape using Y points with 3/0 monofilaments. The edges are sutured with separate points in one time with 3/0 or 4/0 monofilaments.

**Different Z-plasties**
There are three types of Z-plasty.

* Lengthened Z-plasty
This gives a lengthened effect to the central axis by reducing the transversal axis. A lengthened Z-plasty is indicated in two cases: to release a contracture scar and to avoid or prevent a retracting scar. Z-plasties can be single (Fig. 2), double (Fig. 3), or multiple.

![Fig. 2 - Single Z-plasty.](image)  ![Fig. 3 - Double Z-plasty.](image)

* Transposed tissue Z-plasty
The angle between the axis and the branch of the Z
is less than 60°. We lose the lengthening effect, which is
replaced by transposition.

* Closing of cutaneous defect (*Fig. 4*)

The Z-plasty is drawn inside or close to the cutaneous
defect in order to give a lengthened effect and to facili-
tate the closure (*Fig. 5*).

**Fig. 4** - Z-plasty for cutaneous defect.

**Fig. 5** - Z-plasty closer to the cutaneous defect.

**Indications of Z-plasty in cervico-facial burns**

In spite of preventive treatment, burns always cause
scars and sometimes leave functional sequelae. Cervico-
facial contracture scars lead to limitation of movement and
functional disabilities. The Z-plasty, a simple practice with
a limited hospitalization duration (one day), offers a quick
recovery in the post-surgical period and is very efficient
for the patient.

For the burn patient, there should be a three-month in-
terval between operations.

It is better to perform many small Z-plasties than one
big one, which may lead to flap viability problems. The
long-term result is the same (*Figs. 6-9*).

**Figs. 6, 7** - Cervico-facial scar (burns sequelae).

**Figs. 8, 9** - After Z-plasty.
Conclusion

The Z-plasty is a simple surgical practice without great honour for the surgeon but very helpful for patients, who after each operation notice an improvement in their movement.

RESUME. Les plasties en Z permettent de façon simple de libérer les brides soit en changeant l’orientation d’une cicatrice, soit en augmentant sa longueur surtout quand elle est rétractile.

BIBLIOGRAPHY


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