

The Importance of Facial Retaining Ligaments' Preservation During the Subcision

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Subcision is described as an efficient treatment for atrophic acne scars particularly of the rolling type.¹ In this method, atrophies are improved by using a needle or blunted-tip blade to detach the fibrous strands beneath the scars and subsequently replacing these strands with a more normally oriented connective tissue. Achieving an optimum result with this procedure depends on inducing an adequate amount of fibroplasia in the subcised region.¹

Previous studies suggest that the best skin levels at which to perform subcision are the deep dermis and the dermosubcutaneous junction. A Nokor needle is generally inserted into the deep dermis, whereas a blunted-tip blade cannot penetrate the dermis and is usually entered into the dermosubcutaneous junction.² A blunted-tip blade seems to be a safer option due to the reduced possibility of unintended shifting to too superficial or too deep levels of the skin.³

A critical concern in extensive subcision in these levels is the possibility of disrupting “retaining ligaments,” which are stable fibrous strands that attach the periosteum or deep fascia to the dermis (Figure 1).⁴ These important structures act as steady supports to adhere the skin and superficial fascia (ie, the superficial muscular aponeurotic system) to the underlying facial bones or deep fascia to provide facial stability and expression.⁴ During the procedure, aggressive insertion and motion of the needle/blade in the aforementioned skin levels may rupture retaining ligaments and subsequently cause facial sagging. Thus, it may lead to an aging appearance of young patients seeking treatment for acne scars, particularly after multiple

sessions. This can also be observed as a complication of subcision performed to achieve rejuvenation. Prominent nasolabial folds have been noted as a postoperative outcome of facelift surgery and from tearing the retaining ligaments during extensive undermining.⁵

The physician must, first of all, possess a thorough knowledge of anatomy and the exact location of the retaining ligaments (Figure 2). Selecting the correct entry points and directions to avoid detaching these ligaments is the next step. Choosing an insertion point in front of the sideburns to approach the scars in all medial cheek and buccal areas may lead to facial sagging caused by damage to the zygomatic and masseteric cutaneous ligaments. Therefore, an entry point in front of the masseteric cutaneous ligament to reach the buccal, infraorbital, and medial mandibular area is preferable to minimize injury to the aforementioned ligaments (Figure 2). On the other hand, choosing the point of entry in the front of the sideburns is suitable for approaching periauricular and mandibular ramus scars. Also, this point can be used simultaneously to approach temporal acne scars.

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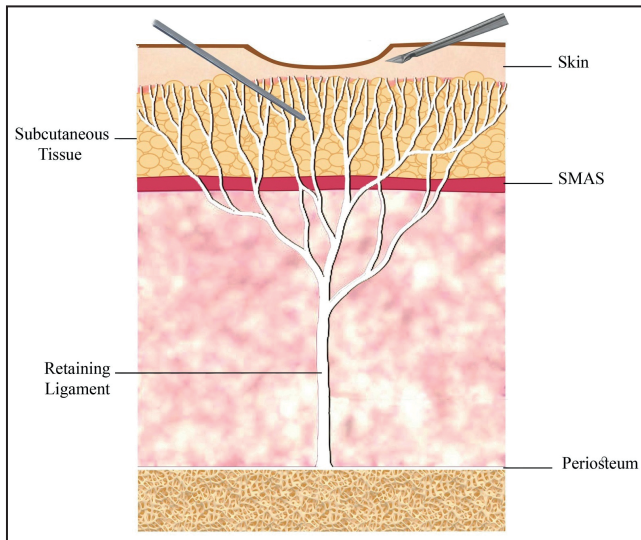


Figure 1. Schematic of the retaining ligaments which attach the periosteum to the dermis. Although a Nokor needle can penetrate more superficially than a blunted-tip blade, both can cause ligament disruption.

Long blades and a single entry point have been recommended by some authors.² However, in severe cases the use of multiple insertion points and shorter blades is preferable because there is less risk of ligament rupture when the blade movement is limited to 1 or a few facial cosmetic units.

There are some concerns about vascular and neural injury in this procedure, particularly in the temporal, marginal mandibular, and periauricular regions.² Based on the fact that the main vascular and neural trunks are located beneath the superficial musculoaponeurotic system except in the central part of the face,⁴ performing the subcision at the proper depth prevents major vascular and neural injury in this procedure.

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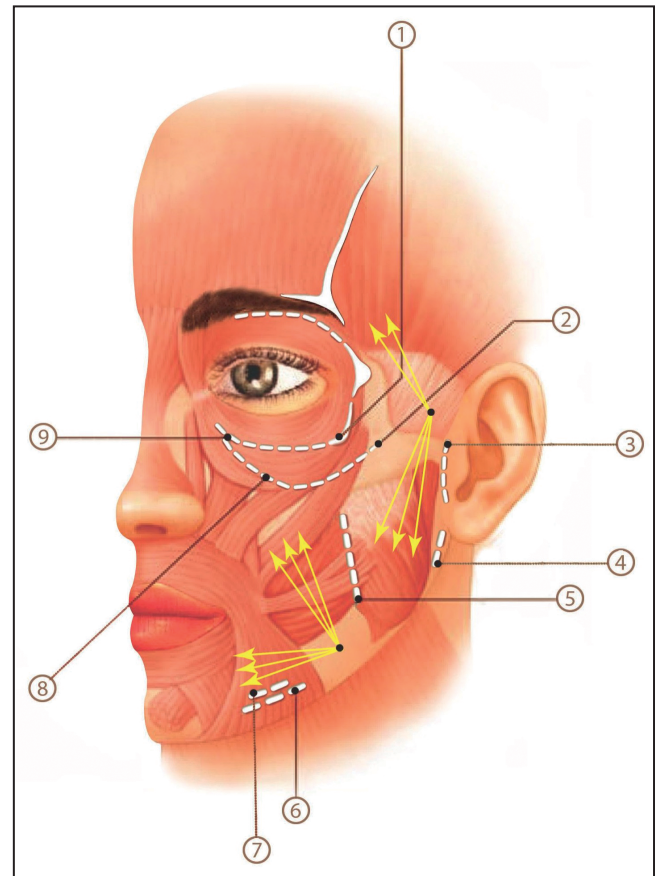


Figure 2. The retaining ligaments of the face: 1, orbicularis retaining ligament (lateral part); 2, zygomatic ligament; 3, preauricular parotid cutaneous ligament; 4, auriculoplatysmal ligament; 5, masseteric cutaneous ligament; 6, platysma mandibular ligament; 7, mandibular osseocutaneous ligament; 8, zygomatic cutaneous ligament; 9, orbicularis retaining ligament (medial part). The suggested entry points and directions avoid rupturing these ligaments during the subcision.

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