



## Fat Plication: A Novel Technique for High Tension Wound Closure

Janet Y Li<sup>1,2</sup>, Tri H Nguyen<sup>3</sup> and Michael R Migden<sup>1,2,4\*</sup>

<sup>1</sup>Department of Dermatology, University of Texas Medical School at Houston, USA

<sup>2</sup>Department of Dermatology, University of Texas MD Anderson Cancer Center, USA

<sup>3</sup>Department of Surgical Dermatology, University of Texas Medical School at Houston, USA

<sup>4</sup>Department of Head & Neck Surgery, University of Texas MD Anderson Cancer Center, USA

### Clinical Image

Large surgical defects can lead to significant suture tension upon closure despite undermining. Herein we describe a novel and useful technique of fat plication to reduce closure tension. This technique works best in areas with fibrous fat septae such as trunk and proximal limbs, although some areas of the head and neck also provide adequate tissue strength. After minimal undermining, a 3-0 polyglactin 910 suture on a PS2 needle is inserted horizontally into the fat at the most lateral point of the undermined tissue. The needle is then guided in a horizontal arc through the fat and fibrous septae to exit at the same level. The second throw then enters the fat on the direct opposite edge and at the same depth (Figure 1). After exiting the fat, the suture is tied to bring the wound edges closer (Figure 2). The goal of these sutures is to close 2/3 to 3/4 of the defect width rather than in tight apposition. Full closure with this suture may place excess tension on the fibroadipose tissue. After narrowing of the adipose plane is completed, subsequent buried dermal sutures are placed under significantly reduced tension in the plane above.

Although other closure techniques in high tension areas such as fascial plication [1] and butterfly suture [2] have been described previously, fat plication provides an additional subdermal option dependent on the presence of adequate fibrous adipose tissue. This method utilizes the abundant fibroadipose tissue located in the trunk, proximal extremities, and lateral cheek. Areas known to have

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#### \*Correspondence:

Michael R. Migden, Department of Head & Neck Surgery, University of Texas MD Anderson Cancer Center, 1400 Pressler St., 1452, Houston, TX 77030, USA, Tel: 713-563-1665; Fax: 713-745-3597;

E-mail: [mrmigden@mdanderson.org](mailto:mrmigden@mdanderson.org)

Received Date: 19 Dec 2016

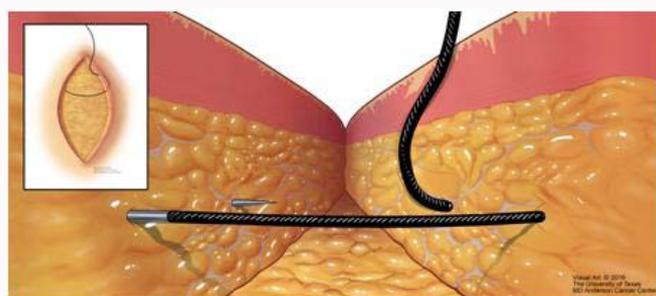
Accepted Date: 08 Mar 2017

Published Date: 22 Mar 2017

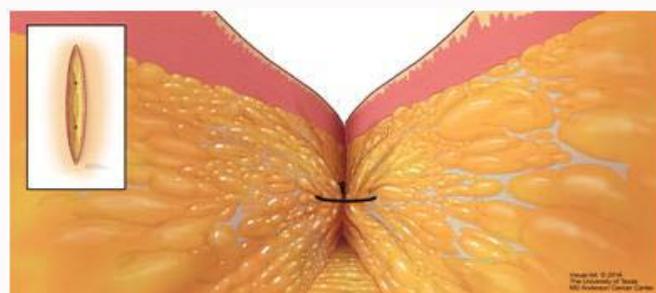
#### Citation:

Li JY, Nguyen TH, Migden MR. Fat Plication: A Novel Technique for High Tension Wound Closure. *Clin Surg.* 2017; 2: 1361.

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**Figure 1:** Needle arcs horizontally through the fat and fibrous septae on one side and enter the fat on the direct opposite edge and at the same depth. Inset: Bird's eye view showing a substantial purchase of fat.



**Figure 2:** Suture is tied to bring wound edges closer. Inset: Bird's eye view showing the defect narrowing by 2/3 to 3/4 of original width.

minimal fibrous septae such as hands, feet, and scalp are not good locations for this technique. We believe that fat plication provides at least equal efficacy in decreasing dermal and epidermal tension as compared to other previously described methods. In addition, this method of plication provides advantages when compared to butterfly sutures and fascial plication. In butterfly sutures, there is a risk of hypereversion and dimpling of the skin surface. Fascial plication is limited by the fascia's deep location in many areas such as the trunk and potential pain associated with sutures that may encounter muscle fibers. With fat plication, less undermining is required as the sutures themselves hold more tension. We believe that fat plication provides a secure and reliable method of supporting wound tension in many areas.

## References

1. Kantor J. The Fascial Plication Suture: An Adjunct to Layered Wound Closure. *Arch Dermatol.* 2009; 145: 1454-1456.
2. Breuninger H, Keilbach J, Haaf U. Intracutaneous butterfly suture with absorbable synthetic suture material. Technique, tissue reactions, and results. *J Dermatol Surg Oncol.* 1993; 19: 607-610.