

## Plotting Dermal Sutures: An Easy Dermal Suture Technique

Hiroshi Matsumoto, MD  
Yoshihiro Kimata, MD, PhD  
Seiji Komatsu, MD, PhD  
Kumiko Matsumoto, MD

Min Zaw Aung, MBBS, MMedSc (Surgery)

Department of Plastic and Reconstructive Surgery  
Graduate School of Medicine, Dentistry, and  
Pharmaceutical Science  
University of Okayama  
Okayama, Japan

Sir:

When performing dermal sutures, we aim to achieve a satisfactory postoperative scar from an aesthetic perspective and reduce surgical site infection and other postoperative complications.<sup>1-3</sup> Although the usefulness of dermal sutures is widely recognized, some residents and general surgeons are still reluctant to use dermal sutures due to concerns regarding the time needed to master this unfamiliar technique. Therefore, we designed a plotting dermal suture (PDS) method, which can be easily applied to appropriately perform dermal suturing. With this technique, we believe that even inexperienced surgeons can make dermal sutures in a quick and easy manner.

### TECHNIQUE

Before dermal suturing, the wound edges should be approximated through subcuticular closure, depending on the skin condition surrounding the incision or wound.

In the present report, we describe the use of this method for the closure of an incision on the abdominal wall. First, we mark dots on the skin representing the target dermal suture points (Fig. 1); we usually mark these dots 10 mm from the wound edge with an interval of 15 mm between dots. Generally, we use 4-0 absorbable sutures, and in certain cases requiring high tension, we use 3-0 absorbable sutures.

Copyright © 2014 The Authors. Published by Lippincott Williams & Wilkins on behalf of The American Society of Plastic Surgeons. PRS Global Open is a publication of the American Society of Plastic Surgeons. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 License, where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially.

Plast Reconstr Surg Glob Open 2014;2:e108; doi:10.1097/GOX.000000000000052; Published online 13 February 2014.

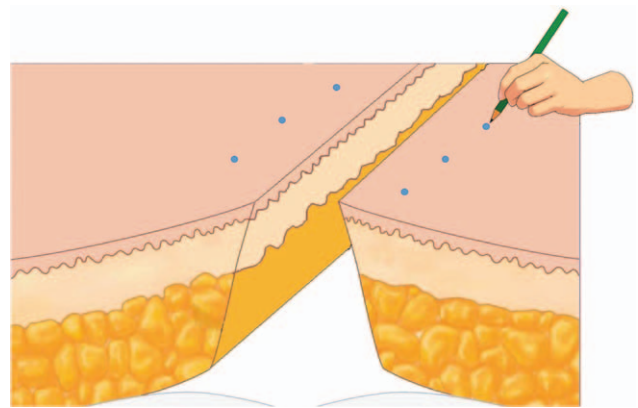


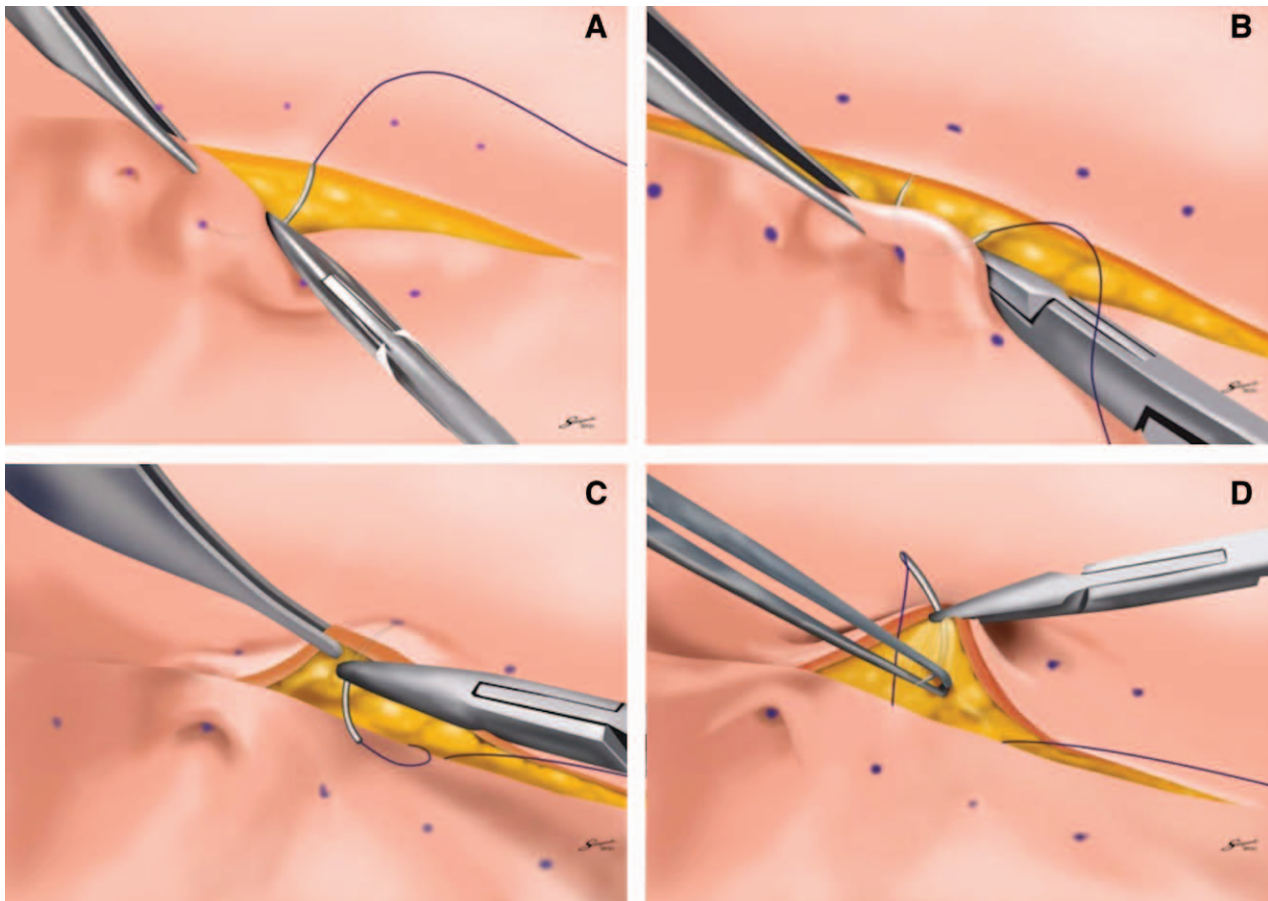
Fig. 1. Before suturing, mark dots on the skin at the target dermal stitch points.

The suturing technique is similar to the classic dermal suturing technique. The needle is inserted vertically from the fat layer to just below the dot, screwing the needle into the reticular dermis and advancing it to the epidermis. The needle is then extracted and reinserted in the contralateral side of the wound edge at the same dermal level and advanced to just below the dot, screwing the needle into the reticular dermis and advancing to the epidermis. Thus, by marking the dots before performing the dermal suture, they can be easily followed for effective wound closure (Fig. 2).

### DISCUSSION

Needle handling is generally easy for plastic surgeons who practice dermal sutures daily. However, it may be difficult for residents and general surgeons who do not routinely use this type of suture. Therefore, we developed an easier method of performing this technique.

The advantages of this method are as follows: 1) after marking the dots, only the dot position at the level of the fatty layer for insertion and extraction of the needle needs to be focused on; 2) by marking the dots before initiating the procedure, the appropriate intervals can easily be ensured during suturing, and it is thus less time consuming; and 3) the wound margin rises up symmetrically, which provides better approximation of the wound edges, thus promoting wound healing and resulting in less scarring. We currently conduct a hands-on seminar of the PDS method to residents and general surgeons and have observed better outcomes in both groups after practicing our proposed method.



**Fig. 2.** The needle is inserted vertically from the fat layer, just below the dot (A), screwing the needle into the reticular dermis and advancing it into the epidermis (B). The needle is then pulled and reinserted into the contralateral side of the wound edge at the same dermal level and advanced to just below the dot (C), screwing the needle into the reticular dermis and advancing it into the epidermis (D).

By applying our PDS methods, we believe that all surgeons, with or without clinical experience, can master the dermal suture technique in a short time period. Thus, we recommend the use of the novel PDS method for easy, quick, and effective wound closure.

Correspondence to Dr. Matsumoto  
 Department of Plastic and Reconstructive Surgery  
 Graduate School of Medicine, Dentistry, and  
 Pharmaceutical Science  
 University of Okayama  
 2-5-1, Shikata-cho  
 Kita-ku, Okayama City  
 Okayama 700-8558, Japan  
 ojyarumatsu@ninus.ocn.ne.jp

#### DISCLOSURE

*The authors have no financial interest to declare in relation to the content of this article. The Article Processing Charge was paid for by the authors.*

#### REFERENCES

1. Johnson A, Young D, Reilly J. Caesarean section surgical site infection surveillance. *J Hosp Infect.* 2006;64:30–35.
2. Johnson RG, Cohn WE, Thurer RL, et al. Cutaneous closure after cardiac operations: a controlled, randomized, prospective comparison of intradermal versus staple closures. *Ann Surg.* 1997;226:606–612.
3. Shetty AA, Kumar VS, Morgan-Hough C, et al: Comparing wound complication rates following closure of hip wounds with metallic skin staples or subcuticular vicryl suture: a prospective randomized trial. *J Orthop Surg.* 2004;12:191–193.