

How I Do It

A Simple Method of Stabilizing a Coronary Graft onto a Suction Stabilizer in Coronary Surgery

Min-Ho Song, MD,¹ Yoshiyuki Tokuda, MD,¹ Toshiaki Ito, MD,² Masaya Hirai, MD³

¹Department of Cardiovascular Surgery, Gifu Prefectural Tajimi Hospital, Gifu; ²Department of Cardiovascular Surgery, The Japanese Red Cross Nagoya First Hospital, Aichi; ³Department of Cardiac Surgery, Aichi Medical College, Aichi, Japan

ABSTRACT

Because a suction-type stabilizer does not move once it is attached to the heart in either on-pump or off-pump coronary surgery, we have been using a simple method of stabilizing mammary, radial, or epigastric artery grafts with a suction stabilizer in anastomosis of coronary artery grafts. This method excludes the need for assistants to hold the graft, which can be cumbersome, thereby reducing graft movement. This experience prompted us to report this method.

INTRODUCTION

It is a surgeon's preference how to arrange a graft and a coronary artery for coronary artery bypass grafting anastomosis. Some surgeons place a graft on the heart and others place a graft on a graft holder. In either way, the graft is subject to movement in a shaking operative field. Recognizing that the stabilizer provides the best motionless field, we have employed the following technique in coronary anastomosis.

SURGICAL TECHNIQUE

Once the target coronary artery is suctioned and stabilized with an Octopus 4 device (Medtronic, Minneapolis, MN, USA), 3M adhesive tape (Johnson and Johnson, Somerville, NJ, USA) is put onto 1 rim of the stabilizer. Then each graft is fixed in place by putting a light bulldog clamp in position to bite both the graft and the adhesive tape (Figure). This arrangement provides a motionless field in anastomosis. We prefer a 10-stitch method in coronary anastomosis. After completing 5 stitches around the heel position of the target coronary artery, the applied light bulldog clamp is released and the rest of the anastomosis is carried out in the usual manner.

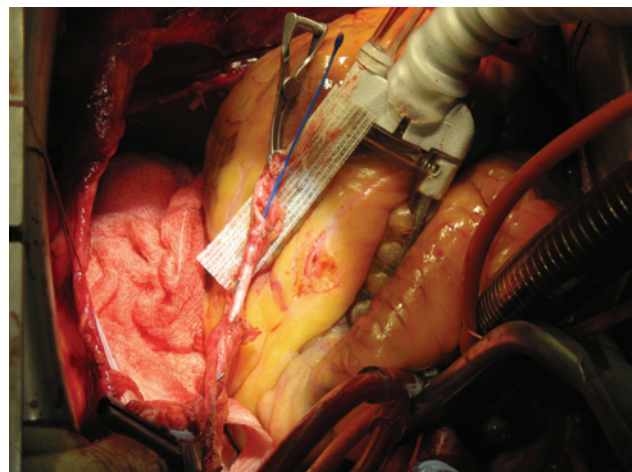
Received December 22, 2005; accepted January 11, 2006.

Address correspondence and reprint requests to: Min-Ho Song, MD, Department of Cardiovascular Surgery, Gifu Prefectural Tajimi Hospital, 5-161 Maebata-cho, Tajimi, Gifu, 507-8522, Japan; 81-572-22-5311; fax: 81-572-25-1326 (e-mail: p41558@govt.pref.gifu.jp).

Using this method, we have been able to successfully place steady stitches in a field that is both motionless and bloodless. Because arterial grafts and the target coronary artery are positioned at a close, side-to-side position, it is easy to swiftly place the stitches.

COMMENTS

Although several graft-holding methods in coronary artery bypass grafting have been previously reported [Rama 2001; Kucukarslan 2005; Obo 2005], most of them have potential drawbacks because of a tremulous or moving field. We have been employing a concept that provides a reasonable method for placing a graft when using the steadiest device, that is, a suction stabilizer. From October 2003 to September 2005, 126 patients underwent either on-pump or off-pump coronary artery bypass grafting. The overall number of distal anastomoses was 366 and all patients underwent bypass that used the left internal mammary artery, and/or the radial artery, and/or the right gastroepiploic artery with the use of this technique.



Intraoperative view of the method in anastomosis of the left internal mammary artery to the left anterior descending artery during on-pump coronary artery bypass grafting.

No grave complications resulted from the application of this technique and the overall patency rate was 99.8%. Also, this method is not difficult to apply for all coronary arteries, including the right and left circumflex arteries and the left anterior descending artery.

ACKNOWLEDGMENT

We acknowledge Mrs. Liya Jeon for her caring help in preparing this manuscript.

REFERENCES

- Kucukarslan N, Arslan Y, Us MH, Yilmaz AT. 2005. A simple atraumatic clamp technique without a stabilizer in off-pump CABG. *J Card Surg* 20:453-4.
- Obo H, Mukohara N, Yoshida M, Shida T. 2005. Hammock-like graft-holding method using a cotton bandage in off-pump coronary artery bypass. *Ann Thorac Surg* 80:353-4.
- Rama A, Mohammadi S, Leprince P, Gandjbakhch I. 2001. A simple method for heart stabilization during off-pump multi-vessel coronary artery bypass grafting: surgical technique and short term results. *Eur J Cardiothorac Surg* 19:105-7.