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VIEWPOINT

The Usefulness of a Versatile Retractor System in Venous Anastomoses with Microvascular Anastomotic Coupler

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Sir:

Breast reconstruction with microvascular anastomosis has become an increasingly standard procedure. Arterial anastomoses are generally still hand-sewn, but venous anastomoses are frequently completed with a coupler device.[1–3] The device overcomes the vessel limitations and also increases operative efficiency. The most widely used device is still the Synovis microvascular anastomotic device (GEM Coupler; Synovis Micro Companies Alliance, Birmingham, Ala.).[2,3] Many reconstructive surgeons take the use of this device for granted, and our facility is no exception for most venous anastomoses. In its usage, the donor vein, followed by the recipient vein, is attached to the individual coupling components, and the ends of the vessels to be anastomosed are pulled through opposing rings and everted onto device pins. Irrigation of the vessels with heparinized saline is sometimes required. One significant drawback of this anastomotic device is that the surgeon has to hold the handle of the device, engaging his one hand constantly. Therefore, if there is no assistant, the surgeon has to complete the above procedures using only one hand because the other hand is constantly engaged in holding the device.

The Octopus (Mednosbro GmbH, Rudolfstetten, Switzerland) serves as a versatile retractor system that has 3 joints that are similar to those in the human upper limb and it allows precise all-direction maneuvers.[4,5] The system also has flexible settings, which allow the surgeons to place the machine in an ideal position to have a perfect view simply by tightening or loosening a special screw attached to the device. Many kinds of surgical procedures can be achieved by a single surgeon, using the various parts at the tip of the retractor. One suitable arrangement has the GEM coupler fixed among certain tip parts of the retractor. The handle of the GEM coupler is usually fixed with the tip of the Octopus retractor facing the operator from the opposite side (Figs. 1, 2). The setup is effortless and can be easily adjusted with 1 screw, and it takes <5 minutes in total. One hand of the surgeon is released from the simple task of holding the device, which allows the surgeon to perform a more careful operation on blood vessels with bilateral hands using the Octopus universal retractor grip and the anastomotic device.

We have introduced the Octopus device into reconstructive surgery and have used the same without any assistant. The tool enables a single surgeon to complete the operation alone, even in emergency situations, and has various advantages when used in combination with a vascular anastomosis device. First, there are no ups and downs even when the vessel wall is put on the pins of the GEM because the fixation of the GEM body is very stable. Second, we do not have to worry about injuring blood vessels and damaging tissue because the vessels do not move. Also, when the anastomosis is performed with the internal thoracic artery and vein, it is minimally affected by shaking due to respiratory fluctuation. There are no particular restrictions on this system. The original function of the Octopus was to provide surgeons with a large and wide surgical field throughout the procedure. This system makes it possible to complete reconstruction with a free flap alone, through all the required processes.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

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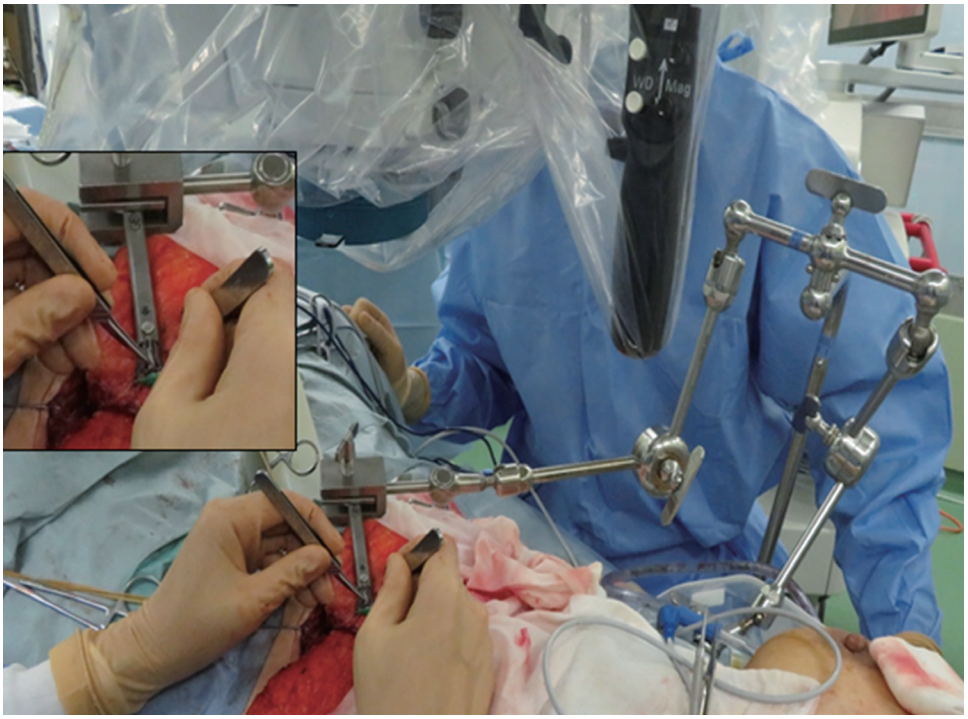

Fig. 1. Intraoperative image showing the Octopus versatile retractor as folder of a microvascular anastomotic coupler during venous anastomoses.

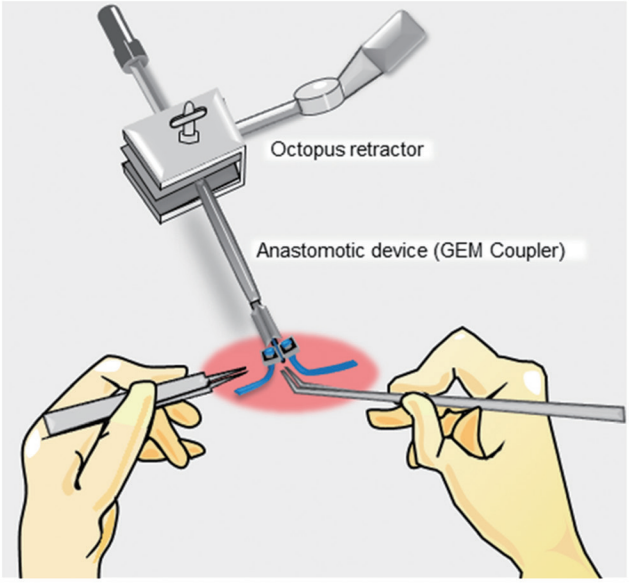

Fig. 2. Schematic illustration of the microsurgical procedures. Certain tip parts of the retractor can hold GEM coupler, which allows the surgeon's bilateral hands to be free.