

Microvascular Anastomosis: A Laboratory Device for Holding Stay Sutures and a new Approximator Clamp

Sir,

In 1973, Acland R.D. described an instrument for holding the stay sutures of a microvascular anastomosis [1]. Afterwards, this device was improved and became an unchangeable instrument in vascular anastomosis, called vascular approximators. Approximator clip is an expensive microsurgery tool that cannot be found easily in the market. But approximator clips are known to be quite useful for laboratory researchers, especially for the residents practicing in the laboratory, both technically and in terms of time (Figure 1).

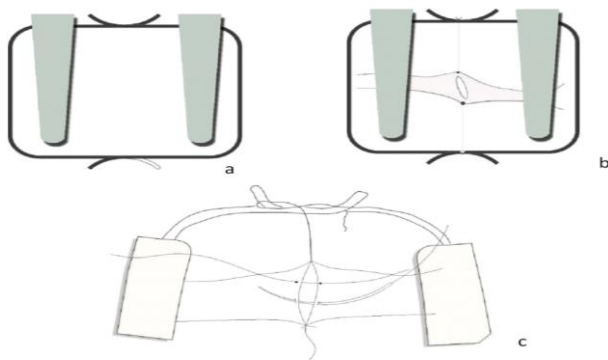
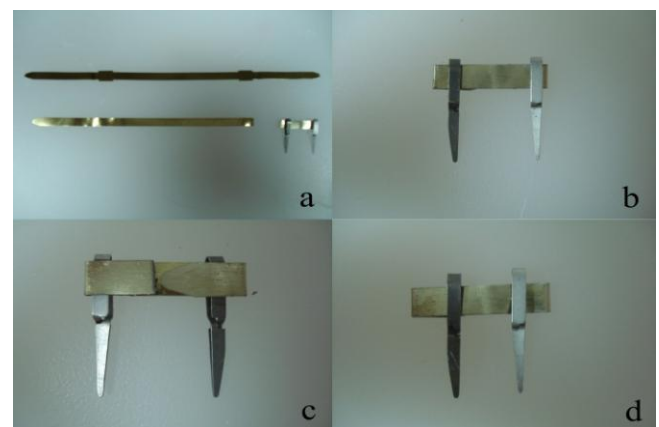


Figure 1: Approximator clip set Acland described schematized above.

For this reason, a clip set can be generated from free clips by simple methods (picture 1). Metal part of a file dossier was taken out and was cut from one side, and placed in the middle of two free vascular clamps and folded up. Also green colored file dossier was cut from its hard plastic part to make a background material.

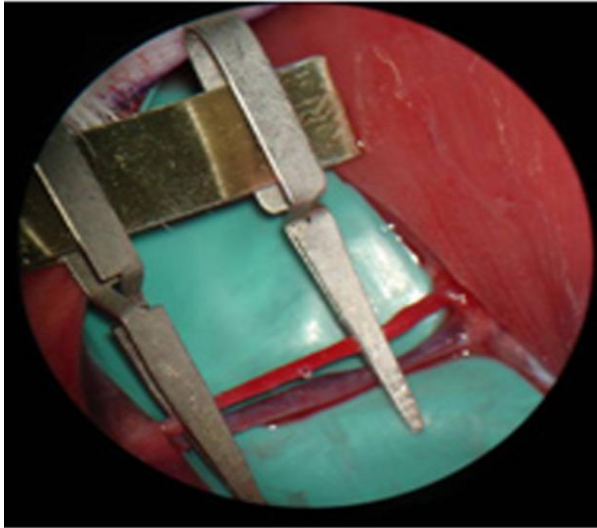
In the past, before the invention of approximator clips, the researchers described different ways of handling stay sutures. For example, they handed an assistant to hold, or attached weights to pull the suture [2-6]. After Acland's invention, approximator clamps became popular in vascular anastomosis. Current approximator clips in the

market provide ease of anastomosis. First two stitches (stay sutures) on vessel bind respectively to the top and bottom side of this system (approximator). Thus, lumen was stretched so that the other stitches can be sutured easier.

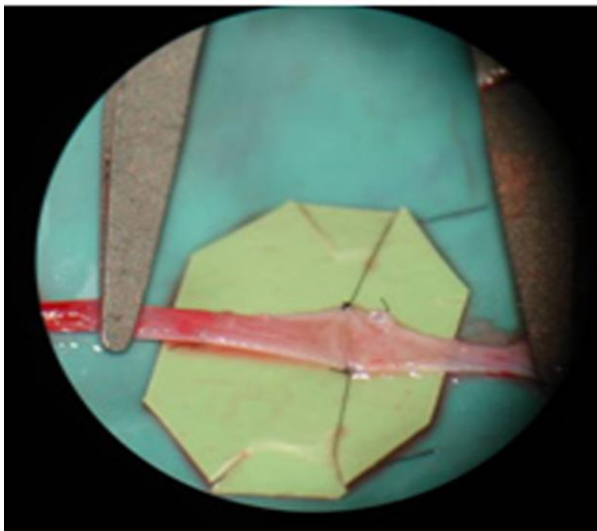


Picture 1: Generation of approximator clips: (a) Metal part of a file dossier to be placed in the middle of two free vascular clamps (b) The united clamps frontly seen (c) The united clamps from behind (d) Device helps to bring together the vessel ends.

While practicing, the united free clips were placed after the dissection of the vessel (Picture 2). After the vessel was cut in the middle, it was easier to arrange the optimum distance between the vessel ends for end-to-end anastomosis by narrowing or widening the united free clips system. Also, the background made by a thick plastic (for example hard plastic dossier file) was utilized for lumen stretch method. Notch was put on the top and bottom of the background (Picture 3). First suture was put and tied; one end was left long and tighten, to the notch on the top of the background. The second suture was put in one third of the circumference distant from the first, as described by Cobbett [4]. The long end of the second suture was fastened to the bottom notch, under optimum tension to spread the anastomosis lumen slightly (Picture 3). By this means, stretching of the lumen was provided.



Picture 2: Femoral vein and the artery of a laboratory rat, femoral artery is clamped with the united free clamps and the Murphy branch is tied and cut



Picture 3: A rectangular green plastic file dossier acting as a background material. Two notches each are made by scissors to the top and the bottom sides

This letter describes a new approximator clamp, which can be made by the researcher in the lab easily and it is cost effective. This instrument can be used together with a simple cut background material which will be used as a device to hold the stay sutures. In our opinion, these methods will make lab studies easier.

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