Gloves as a Teaching Tool in Vascular Surgery

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Abstract Training and practice are essential aspects of keeping surgical skills sharp. We present a technique where we use latex gloves as a reliable, easily available, inexpensive tool to train surgeons in vascular surgery.

Keywords Teaching tools · Vascular surgery

Introduction

Practice makes perfect, and so the old saying goes. Professionals in all fields practice so as to sharpen their skills. Simulated exercises have been known to improve skills and thus improve the outcome of a procedure [1, 2]. Commercially available simulation tools are prohibitively expensive for a young surgeon who will need it the most. Use of animal tissues are fraught with problems of procurement, storage, ethical concerns, risk of disease transmission and are perishable. Hence we were motivated to develop a tool for practice of vascular surgery that is easily available, inexpensive and which closely resembles a vascular tissue.

Material and methods

Standard surgical gloves were used to practice vascular surgical procedures like arteriotomy closure with vein patch, end to end anastomosis, end to side anastomosis, making a spiral graft, making of a vascular cuff (Fig. 1). We used 4–0 to 7–0 suture materials for the anastomosis. The only instruments used were a 12cm needle holder, Adson's non-toothed forceps and a mosquito artery forceps (Fig. 2). All procedures were done under magnification using a 3.5X loupe with a working distance of 420mm.

Results

We were able to practice all standard vascular surgical procedures and successfully transfer the simulation to patient care. The feel and the handling of the latex gloves was very similar to that of the great saphenous vein. The latex gloves yielded itself without tearing for various vascular surgical procedures.

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Fig. 1 Instruments used for the exercise

Fig. 2 Simulation of various vascular anastomoses using gloves

Discussion

Training improves skills which in turn can be translated into good surgical results. However the tools available for practice are expensive and are out of reach for most residents in training. Hence we came up with the idea of using the common surgical glove as a training tool to practice vascular surgical techniques.

We find that the gloves handles very similar to a vein thus making it a useful tool in training. Various vascular surgical procedures like arteriotomy closure, patch closure of a arteriotomy, making of a spiral graft, can be practiced. Patches of the glove can be cut and be stitched longitudinally to make a tube graft which can then be used for practicing anastomoses. Any suture material ranging from 4–0 to 7–0 can be used for practicing and at the completion of the anastomoses the suture can be pulled out without knotting and reused, saving cost and resources. If it is available magnification can be used during the procedure.

Conclusion

We conclude that surgical glove is a useful, easily available and an inexpensive teaching tool for training young surgeons in vascular surgery.

Reference

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