

The "11 O'clock Heel First" technique for microvascular end-to-side anastomosis

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Abstract

Background: The heel of a microvascular end-to-side anastomosis is a common site for technical imperfections. We describe a simple technique to overcome this challenge. **The aim** of the technique is to insert all the sutures in an inside-to-outside manner at the heel area on the donor side of the anastomosis. This technique has first been tested in a laboratory setting and then was further elaborated in a clinical setting. **Materials and Methods:** One hundred and twenty adult albino Wistar rats of both genders were randomized into the following two groups: (A) Control, 48 rats, representing approximately 40% of the total sample underwent the usual two anchoring stitch technique; (B) Study group, 72 rats, of the total sample, underwent the "11 O'clock Heel First" technique described. Patency was confirmed both clinically and by the use of fluorescein angiography. Rat weight, diameter of both the donor and recipient vessels, type of anastomosis (arterio-arterial or arterio-venous) and angiographic findings were used as variables. A P value of less than 0.05 was considered significant. **Results:** The proposed technique had increased patency rates as compared to the standard technique which was statistically significant ($P = 0.021$). However, there was no difference between the patency rates of arterio-arterial and arterio-venous anastomoses. **Conclusion:** The proposed technique is useful for perfecting the heel area of a microvascular end-to-side anastomosis in both laboratory and clinical settings. **Key Words:** Cerebral revascularization, end-to-side microvascular anastomosis, heel. **Key Messages:** In this study conducted on adult albino Wistar rats, a new technique of microvascular anastomosis, by first securing the heel suture

at 11 O' clock position in the recipient vessel, facilitated the placement of all other sutures in an inside-to-outside fashion while visualizing the vessel lumen from inside. The technique showed better patency rates when compared to the standard two anchoring stitch technique of .microvascular anastomosis