

## A New Method To Estimate Rate Of Thrombosis Propagation In Traumatic Vascular Injury Of Extremities

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### INTRODUCTION:

One of special consideration before embarking on repair or graft of a traumatic vascular injury is the propagation of the thrombus. The length of intraluminal thrombus might be increased from the time of imaging to operation, and lead to underestimation from the surgeon point of view. Hence, we develop a new practical method to estimate the rate of thrombosis propagation following vascular injury of extremities.

### MATERIALS & METHODS:

Data were obtained from records of 45 patients who were treated for vascular injury of the extremities from year 2006 to 2013 in HUSM. The length of intraluminal thrombosis was measured by diagnostic conventional or CT angiogram, and was compared to intraoperative findings.

The result was analyzed to evaluate correlation between time of ischaemia and length of injury from imaging with the intraoperative length to highlight the propagation of thrombus. A scattered graph was drawn to evaluate the relationship between duration of injury time and the length of vessel auto/synthetic graft used to repair the injured vessel.

### RESULTS:

The mean length of injured vessel (intra operative) was 8.5cm, whereas the mean graft length harvested was 10.8cm. There was a statistically significant in response time with propagation of thrombus (p-value <0.05). Our result showed a strong correlation between the length of injured vessel and the bypass graft length (figure 1). This enabled us to derive a formula to recommend the optimal graft length. Hence, we propose this formula for the ideal graft length.

$$\text{Graft Length(cm)} = 0.58 + 1.2(\text{Length of injured vessel})(\text{cm})$$

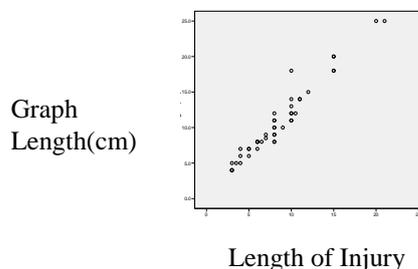


Figure 1: Scattered graph showing significant positive linear relationship between length of injury and graft length

### DISCUSSIONS:

To date, there is still no report to confirm thrombosis propagation clinically.<sup>2</sup> This is important as an optimal vessel graft size is essential for successful revascularization. High tension of short graft will leak, while too long graft will lead to torsion and strangulation of the vessel.

### CONCLUSION:

Propagation of thrombosis should be addressed in any traumatic vascular injury for estimation of the graft length to provide an optimum outcome of revascularization.

We propose this new practical method of calculation to estimate an ideal graph length to ensure a successful revascularization.

### REFERENCES:

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