

A Multi-Centred Study Of Incidence Of Avascular Necrosis In Relation To Timing Of Surgery Following Traumatic Neck Of Talus Fracture

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INTRODUCTION:

The treatment of talus fracture is complicated by complexity of the talus. The timing of fixation is one of the concerning issue when it comes to fix the talus fracture due to possibility of compromising the blood supply to the talus following traumatic injury. Several studies concerning the timing of fixation of talus fracture shows no correlation linking the delayed in fixation to formation of AVN. However, despite the study results, emergent fixation has been among the common practice because AVN are potentially devastating complication following trauma.

METHODS:

This is a retrospective study involving 42 patients from the year 2007 to year 2015. All patients with traumatic talus fracture have with different time of surgery had underwent an open reduction and internal fixation. All data was retrieved from three hospitals that involved in this study, namely: Hospital Sultanah bahiyyah, AlorSetar, kedah; Hospital Kulim, Kedah; and Pusat Perubatan Universiti Kebangsaan Malaysia, Cheras.

RESULTS:

Data from 42 patients were retrieved, involving 33 (78.6%) males and 9 (21.4%) female. Age is ranging from 18 to 46 year old. Out of 42 talus that were fixed, 23 (54.8%) are of the right side and 19 (45.2%) are the left side. As for types of neck of talus fracture, which based on Hawkins classification, 27 (64.3%) are type II, 9 (21.4%) are type III and 6 (14.3%) are type IV.

As for the timing of surgery, from the time of injury to the time of definitive operation, the numbers are equal, where 21 (50%) of the patients undergo operation within 24 hours after trauma, and another 21 (50%) of the patients undergo operation 24 hours after trauma. Whether the operation done within 24 hours post trauma or 24 hours after trauma, there are no significant different noted for the timing of surgery (duration) in relation to development of AVN (P=0.064).

Table 1: The distribution of the patients according to sex, side of talus fracture and duration of surgery.

		OUTCOME				P
		NO AVN		AVN		
		N	%	N	%	
SEX	Male	16	48.5	17	51.5	0.33
	Female	6	66.7	3	33.3	
Talus	Right	13	56.5	10	43.5	0.554
	Left	9	47.4	10	52.6	
DURATION	< 24 Hrs	8	38.1	13	61.9	0.064
	> 24 Hrs	14	66.7	7	33.3	
	Hrs					

*Significant P<0.05

DISCUSSIONS:

This study shows a total of 42 patients, half of which were operated on within 24 hours after trauma with the shortest fixation time of 6 hours. The other 21 patients were operated after 24 hours post trauma. The longest definitive fixation time is 7.2 days, noted there is no statistical correlation between fixation timing and the development of AVN which is consistent with the previous findings of others study done.

These numbers however increase substantially with displaced fractures (between 32% to 33%). It is ultimately discovered that the development of AVN is more likely associated with the degree of placement fixation as supposed to time of fixation though early fixation is still recommended.

CONCLUSION :

It is debatable whether AVN is actually caused by delayed fixation of talar fractures. Regardless this series shows the importance of understanding talus fractures. Since no definitive correlation between delayed fixation and AVN development has been made, the careful soft tissue healing needs to be prioritise and restoring the talus in a near congruency when managing talus fraction cases helps to reduce the risk of outcome in TRAUMATIC NECK OF TALUS FRACTURE

REFERENCES:

1. Rammelt, S., Zwipp, H. Talar neck and body fractures. Injury 40:120 – 135, 2009.