

One Year Experience of Extremity Vascular Injuries and their Management by a general surgeon at tertiary care hospital emergency

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ABSTRACT

Aim: To find out management of extremity vascular injuries by a general surgeon.

Methods: This descriptive prospective study was carried out in LGH from December, 2016 to December, 2017. Total of 43 patients presented to trauma center during this time period.

Results: Out of 43(100%) patients who presented in surgical emergency with extremity vascular insults the age ranged from 16 to 63 yrs with mean age of 36.41 years. All patients were of male gender. Out of 43(100%), 25(58.1%) were with isolated vascular injuries while 18(41.9%) were with associated injuries to bones, nerves or veins. Amongst 43(100%) patients, Reverse long saphenous venous grafting was done in 11(25.1%) patients out of 43(100%) patients.

Conclusion: The study concluded that isolated vascular injuries are mostly due to penetrating trauma whereas vascular injuries with associated soft tissue and bony fractures are mostly due to blunt traumas

Keywords: Vascular injury, extremity, saphenous venous graft, polytrauma

INTRODUCTION

Approximately 3% of trauma patients had vascular injuries⁹. The age group with these injuries ranges from 20-40 years of age with male predominance¹. Although all regions of the body are under trauma threat but the extremity vascular insults are mostly involved ranging from 70-8%¹. The mode of this trauma can either be blunt or penetrating where as Blunt injuries are mostly associated with polytrauma and penetrating ones are mostly isolated vascular injuries². Polytrauma of limbs involves injuries to bone, neurovascular and soft tissue and are mostly associated with blunt trauma having popliteal artery injury leading to 20% amputation rates while isolated vascular injuries are having superficial femoral artery involvement with penetrating insults, associated with 5 % amputations^{4,5}. Vascular injuries accompanied with bony fractures are having ten times more risk of limb loss⁶. When blood flow is restored within 6 hours of injury, the limb salvage rate is 87%⁷ where as if it exceeds 8 hours duration then limb salvage rate becomes 20%⁸.

METHODOLOGY

This descriptive prospective study was carried out in Surgical Unit III, Lahore General Hospital, Lahore from December, 2016 to December, 2017. Total of 43 patients presented to trauma center during this time period. All the required investigations were done leading to surgical exploration under anesthesia. Inclusion and exclusion criteria were fulfilled. Prior to surgery, patient's attendants were counseled regarding the outcomes then informed consent was taken. Patient's biodata, operative findings, procedure outcome and follow up was entered in proforma.

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RESULTS

Out of 43(100%) patients who presented in surgical emergency with extremity vascular insults the age ranged from 16 to 63 yrs with mean age of 36.41 years. All patients were of male gender. Out of 43(100%), 25(58.1%) were with isolated vascular injuries while 18(41.9%) were with associated injuries to bones, nerves or veins. Amongst 43(100%) patients, 9(20.9%) patients were with upper extremity injuries where as 34(79.1%) patients were lower limb vascular insults. At the same time out of 43(100%), 22(51.1%) patients had penetrating injuries while 21(48.8%) had blunt trauma to the limbs. Amputations were done in 7(16.2%) patients out of 43(100%). Reverse long saphenous venous grafting was done in 11(25.1%) patients out of 43(100%) patients. Amongst the isolated vascular injuries 25(58.1%) out of 43(100%) patients, only 1(4%) patient ended with amputation while in patients with associated injuries along with vascular injury 18(41.9%) patients out of 43(100%) patients, 6(33.3%) patients ended up with amputation.



DISCUSSION

Public health at large is at serious threat due to trauma world over especially the vascular insults which had fatal outcomes if their diagnosis and managements are delayed. The extremity vascular injuries require prompt vascular repairs or blood flow restoration to save life due to hemorrhage and the limb from ischemia.

Our study focuses that the extremity vascular insults can be isolated as well as associated with bony fractures and nerves injuries. Isolated injuries are mostly penetrating whereas associated injuries are due to blunt trauma. In the current study total of 43 patients were included in the study who presented in Accident and Emergency Department of Lahore General Hospital from December, 2016 to December, 2017. The age group presented with extremity vascular trauma was from 16-63 years with mean age of 36 years. All the patients who presented were 100% of male gender. My study has been supported by Bijay Shah et al who emphasized his results in Nepal and reported the mean age of 35.18 years with gender distribution of 77% of males and 23% female amongst 100 cases with vascular extremity trauma¹⁰. Similarly Mohd L Wani et al in 2010 published in study with total of 35 cases with the mean age of 22 years and all were of male gender which are in accordance with my results regarding age and gender distribution¹¹.

Considering the mode of injuries my data showed that out of 43(100%), 22(51.1%) patients had penetrating injuries while 21 (48.8%) had blunt trauma to the limbs. The study done in Nepal by Bijay Shah et al reported that 68% of vascular injury was due to blunt trauma whereas 32% patients had vascular injuries due to penetrating trauma¹⁰. Likewise Z. B. Perkins et al in 2015 in a meta analysis emphasized that isolated vascular injuries were in 8% of cases while associated soft tissue injuries with vascular trauma was in 26% of cases which was 5% in penetrating while 16 % with blunt trauma¹².

In my study Reverse long saphenous venous grafting was done in 11(25.1%) patients out of 43(100%) patients. Another study done by Bijay Shah et al in 2017 has reported the incidence of reverse Saphenous Venous graft repair in 6% of cases in a study of 100 cases¹⁰. Similarly Mohd L Wani et al in 2010 reported that 19(54.2%) out of 35(100%) patients needed reverse saphenous vein graft¹¹.

My study reported that amputations were done in 7(16.2%) patients out of 43(100%). Amongst the isolated vascular injuries 25(58.1%) out of 43(100%) patients, only 1(4%) patient ended with amputation while in patients with associated injuries along with vascular injury 18(41.9%) patients out of 43(100%) patients, 6(33.3%) patients ended up with amputation. Correspondingly, Mohd L Wani et al reported that the amputation rate was around 6% in a study of 35 cases with extremity vascular injury¹¹. In a

metaanalysis published in British Journal in 2015 by Z. B. Perkins reported limb amputation in 10% cases of vascular extremity repairs¹².

CONCLUSION

The study concluded that isolated vascular injuries are mostly due to penetrating trauma whereas vascular injuries with associated soft tissue and bony fractures are mostly due to blunt traumas but better outcome results of extremity vascular repairs are in isolated injuries as compared to associated injuries. The reason for this better outcome is that there is diffuse intimal injury in blunt trauma as compared to penetrating trauma.

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