

Background:

Traumatic vascular injury of extremities maybe associated with a low mortality rate, yet it can lead to limbs loss that poses a serious impact on patients' life and functionality. Aggressive resuscitation and well executed damage control enable patients to sustain a prolonged revascularization procedure without raising the overall mortality. However, lack of collateral in lower limbs circulation can quickly lead to severe tissue ischemia that results in up to 14.5~25% amputation rate. In addition, none of the current predictor can accurately predict the outcome of the patients and making decision between primary amputation and revascularization for limb salvage is very difficult.

Purpose:

The aim of this study was to investigate the surgical outcomes and risk factors in patients who suffered from vascular trauma in the extremity.

Materials and Methods:

This retrospective study was approved by the institutional review board of Changhua Christian Hospital (CCH). All patients with peripheral arterial injury and received surgical intervention were recruited. The Mangled Extremity Severity Score (MESS) was used for the early assessment of severely injured lower extremities. Clinical and laboratory data were collected through medical chart reviewed. All statistical analyses were performed using SPSS software (version 16.0, SPSS Inc., Chicago).

Results:

From Jan 2011 to Jan 2018? the number of 32 patients diagnosed as traumatic arterial injury and undergone surgical intervention in CCH. The average age of the patients was 43.1 ± 17.9 year-old (range from 15-79 year-old) and 27 of the patients (84.4%) were male. The locations of vascular injury included three upper extremities and 29 lower extremities. There were 24 blunt injuries and eight penetrating injuries and the majority were resulted from motorcycle accident (18, 56.3%). Surgical interventions included extra-anatomic bypass (20, 62.5%), in-situ repair/grafting (6, 21.4%), stent grafting (5, 15.6%) and hybrid operation (1, 4.3%). There were two mortalities among 32 patients; both were OHCA (out-of-hospital cardiac arrest). The limb salvage rate was 76.7% (23/30) among the rest of 30 patients and none of them suffered from secondary amputation after they discharged from our hospital. Factors associated with failed limb salvage included associated open wound, time of diagnosis after the emergency unit and ischemic grade (Fontaine III/IV).

Conclusion:

Peripheral arterial injuries can result in mortality and bring significant morbidities. Early diagnosis is very essential to limb salvage. Limb loss is related not only to the ischemic time, but also to the extent of injury. Traditional extra-anatomic bypass and in-situ repair remain effective and the endovascular technique can apply on selected patients.