



SWSC 2020 On-Demand Meeting Abstracts

20. WORTH LOOKING! VENOUS THROMBOEMBOLISM IN PATIENTS WHO UNDERGO PREPERITONEAL PELVIC PACKING WARRANTS SCREENING DUPLEX

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Background: VTE is a common cause of morbidity and mortality in patients with major pelvic fractures. In patients with life-threatening pelvic hemorrhage due to pelvic fracture, preperitoneal pelvic packing (PPP) reduces mortality. The incidence of VTE in patients who undergo PPP has not been investigated. We hypothesized that patients with complex pelvic trauma who undergo PPP are at high risk for VTE, thus screening duplex is warranted.

Methods: All patients with complex pelvic trauma requiring preperitoneal pelvic packing for hemorrhagic shock from 2015-2019 were reviewed. Management and outcomes including VTE prophylaxis (VTEp), VTE rate, and the use of duplex were analyzed.

Results: During the 4 year study period, 79 patients underwent PPP. Overall mortality was 15%, with 74 patients surviving >48 hours. Excluding the early deaths, 23 (31%) patients developed VTE: 6 deep venous thrombosis (DVT), 12 pulmonary embolus (PE), 5 both DVT/PE (Table 1). Of the 29 patients who underwent screening duplex within 72 hours of admission, 9 (31%) were positive for DVT. The remaining 14 patients with VTEs were diagnosed with imaging performed for symptoms. The median time from admission to VTE diagnosis was 4 days. Thromboprophylaxis (VTEp) was started on 74% of patients within 48 hours of admission, and 88% missed < 2 doses. Neither missed doses nor late initiation (>48 hours) of VTEp was not associated with VTE development. There was no significant difference in the use of REBOA, the number of packs placed, the need for repacking, or length of time to pack removal between the VTE and non-VTE groups (Table 1). Five patients required pelvic angioembolization, in addition to PPP, for hemorrhage control, and 3 of those 5 patients developed VTE. One patient had DVT diagnosed with the pelvic packs in place that was no longer present after the packs were removed.

Conclusion: Patients with complex pelvic trauma undergoing PPP have a 31% incidence of VTE. VTE's were diagnosed early, usually within a week of admission and over a third of screening ultrasounds were positive. There were no differences in the treatment between the VTE and non-VTE group, including VTEp initiation. The overall mortality in this critically injured patient population was only 15%, and VTEp did not increase mortality. With a high incidence of VTE in complex pelvic trauma patients undergoing PPP, we recommend screening duplex ultrasounds.



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Table 1: Patient demographics with and without VTE development

	VTE N=23	No VTE N=51	p-value
Age (years)	48	44	0.19
Sex (% male)	78%	70%	0.49
Mortality	1 (4.5%)	6 (11.8%)	0.31
REBOA *	10 (43.5%)	17 (33.3%)	0.40
Pelvic Angioembolization	3 (13%)	2 (4%)	0.17
Number of packs placed	6.3	6.1	0.12
Repacked	2 (9%)	0 (0%)	n/a
Time to packing removal			
<24 hours	2	11	0.24
24-48 hours	17	36	
>48 hours	4	4	
Time to VTE chemoprophylaxis initiation <48 hours	74%	74%	0.95
Missed doses of VTE chemoprophylaxis	2.5	1.8	0.51

*REBOA= Resuscitative endovascular balloon occlusion of the aorta