Reviewer’s report

Title: Concurrence of Symmetrical Peripheral Gangrene and Venous Limb Gangrene Following Polytrauma: A Case Report

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Reviewer: AKSHAY KUMAR

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The Authors report SPG and VLG occurring concurrently in a polytrauma patient. Although there is Novelty in the topic and the authors wish to provide pathophysiological insights, certain areas like approach to the topic and impact of findings to the specialty of Acute and Trauma care needs to be addressed.

Firstly, Important information like the need for Emergency Craniotomy in the setting of Intraparenchymal hemorrhage (IPH) where the CT Brain showed right frontal 3.5 x 1.5 x 2.6 cm IPH with multiple small contusions in bilateral frontal and right temporal lobe, whether it was for drainage of Hematoma or Ventriculostomy and Placement of Intracranial Pressure (ICP) monitoring bolt?.

Was blood loss from right femur wound debridement or some vascular injury? What caused Intraop hypotension and blood loss of 1 L (read..BP in ER 169/126 mmHg, CT Abdomen being normal) , requiring Blood transfusion and continued Nor epinephrine postoperatively.

The Authors report the case highlighting the vascular (limb) problem encountered in this polytrauma patient i.e. both SPG and VLG, it would have been prudent to add Lower Extremity Duplex and CT Angiogram imaging. And whether Vascular Surgery services were on board (although repeat thrombectomies were done prior to amputation)?...If SPG was working diagnosis, do we assume pulse exams were normal as nowhere palpable pulses have been mentioned( in ER or ICU )despite right Femur injury….Only Day 5 bilateral pedal signals present been addressed. Also was Right TMA adequate management ( Fig 2 shows ecchymosis above ankle ,what was the proximal extent ?).Could this part be elaborated ?

HIT could be one of the differentials as Heparin was started on Day 3 and >50 % reduction in platelet count was seen by Day 8, apart from DIC (D-Dimer, FDP and Fibrinogen levels were not mentioned) and shock Liver. Had HIT panel antibodies (which was not locally available) and SRA testing been available to guide converting to LMWH ? …The synthetic function of Liver was preserved to an extent (depicted by INR ranging 1.01- 1.25).

SPG is an ominous sign in critically-ill ICU patients leading to high mortality (in patients with septic shock and hemodynamic instability). Thereby, emphasizing judicious monitoring , choice and weaning of Inotropes. Especially since Norepinephrine is a potent peripheral vasoconstrictor, in the present case it was used for about 24 hrs, being weaned off by Post op day 2. Thereby
Shock Liver, hypotension and vasopressor use being multi factorial contributing factors to SPG is known and patients with Limb trauma are at risk for DVT.

DVT/PE, pressure sores, stress ulcers, Nutritional deficiency play vital role in management and contribute to significant mortality and morbidity apart from multiorgan failure in polytrauma patients requiring critical care management.

The Authors reporting SPG with VLG occurring concurrently is rare and makes it interesting ..Certain elaborations and explanations could make the case intriguing for readers..

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