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Severe local myotoxicity following envenoming by Russell's Viper *(Daboia russelii)* in Sri Lanka: A case report

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Objective: Myotoxicity following envenoming by Sri Lankan Russell's viper (Daboia russelii) clinically manifests as localized and generalized myalgia, severe muscle tenderness, and dark red or black coloured urine. The toxin which causes this human muscle damage is not clearly understood. However phospholipase A2 toxin in venom is thought to play a major role in muscle damage primarily by destruction of the sarcolemma.

Case Report: A 10 year-old girl presented with a 30 minute history of Russell's viper bite on her right foot. On admission she was conscious. She also had bleeding from the bitten site, severe pain on her foot and vomiting. Her whole blood clotting time (20WBCT) was prolonged. She was given 10 vials of Indian polyvalent anti-venom (vins). She developed neurological signs 90 minutes later. 20WBCT was repeated after 6 hours and it was prolonged, so a further 10 vials of anti-venom were administered. After 10 hours she developed bright red coloured urine and a swelling of the bitten leg with blistering. 20WBCT after 18 hours, was less than 20 minutes and systemic signs of envenomation gradually disappeared. On the Day 2 her entire leg with bite wound was swollen and she complained of severe myalgia and muscle tenderness of the leg. Her 20 hours creatine phosphokinase (CPK) level was 7667 U/L and her urine was positive for myoglobin. Urine became normal in colour after 19 hours. She had a transient rise in serum creatinine and blood urea with normal serum electrolytes levels on Day 2. Her leg swelling and tenderness gradually subsided on Day 3. Patient was given fresh frozen plasma 200 ml, I.V. vitamin K 6 mg daily for 3 days and intravenous antibiotics for 6 days and discharged on Day 7.

Conclusion: Myotoxicity in Russell's viper envenoming is uncommon and mild compared to snakes like Mulga and Tiger snakes in Australia. Median 24 hr post-bite CPK concentrations in symptomatic cases of local myotoxicity in Russell's viper bites were very low compared to this case. The dark coloured urine in Russell's viper envenoming could be due to myoglobinuria, haemoglobinuria, haematuria or a combination of all these. The efficacy of the Indian polyvalent anti-venom in neutralizing the myotoxicity of Sri Lankan Russell's viper's venom is yet to be determined.