

A Race Against Time: Confronting Acute Compartment Syndrome in Dengue Fever

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INTRODUCTION:

Dengue is a deadly viral fever transmitted by mosquitoes, with a staggering 20,292 cases and 14 fatalities in Malaysia for the first quarter of 2023 only. High-grade fever with hemorrhagic manifestation is one of the telltale clinical features. We present a unique perspective on Dengue fever, with a rare complication of limb threatening acute compartment syndrome.

REPORT:

An 18-year-old man was admitted to the hospital for dengue fever in compensated shock. On day 3 of illness, he having mild pain over the site of intravenous cannulation on his left forearm. Clinically, his left forearm compartment was soft with good distal circulation. However, his left forearm pain worsened on day 5 of the illness. Examination shows signs and symptoms indicative of acute compartment syndrome with severe thrombocytopenia. Emergency fasciotomy was performed with an ongoing transfusion of blood products. Intraoperatively, massive intramuscular hematoma encounter over the superficial and deep volar forearm compartment. Unfortunately, the fasciotomy resulted in perioperative extensive blood loss. With dressing the wound well healed completely after 4months. We obtained a modified Vancouver Scar Scale score of 6. Patient regained his limb function with mild limited in wrist extension.



Figure 1: A: Intraoperative, B: Postoperative, C: 4 months postoperative

Table 1: Differences in compartment syndrome between three cases of dengue fever

	Ashraf et al	Khoo et al	Bandopadhyay et al
Time of onset	Day 3 of illness	Day 8 of illness	Day 3 of illness
Gender	Male	Female	Male
Recent history of local trauma	Intravenous cannulation	Arterial line insertion	No
Location	Left forearm	Right forearm	Right arm
Other sites of bleeding	Floral effusion	Floral effusion, Arthritis	None
Other bleeding sites	Upper gastrointestinal bleed	None	Gun bleed
Pathophysiology	Hematoma increases intracompartmental pressure	Hematoma increases intracompartmental pressure	Capillary leak syndrome leading to fluid leakage from intravascular to interstitial space

DISCUSSION

Most common causes compartment syndrome includes tibia/forearm fracture, crush injuries, and extravasation of intravenous cannulation. Urgent fasciotomy is required to prevent complication such as Volkmann Ischemic contracture. In patient with severe thrombocytopenia, some measurement such as smaller incision for first stage of fasciotomy and continuous platelet transfusion intraoperatively benefits in reduction of blood loss.

CONCLUSION:

Acute compartment syndrome in dengue patients is a serious limb-threatening condition and poses a dual threat. While fasciotomy can initially be considered a limb-saving measure, it can quickly turn into a life-threatening situation due to coagulopathy. Hence, it is essential to exercise extreme caution when performing any vascular cannulation on dengue patients with thrombocytopenia

REFERENCES:

1. Khoo C, Chu G, Rosaida M, Chidambaram S. Dengue Fever with Compartment Syndrome of the Right Arm. Journal of the Royal College of Physicians of Edinburgh. 2016;46(4):241-243. doi:10.4997/jrcpe.2016.406