

## Review Article

# Subarachnoid Hemorrhage in Dengue: Problem and Management

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## Introduction

At present, mosquito borne infectious disease is still the important public health treat. Of several infections in this group, dengue is a problematic infectious disease caused by a virus namely dengue virus [1]. Dengue is an important tropical infection that has a predominant clinical presentation as acute febrile illness accompanies with bleeding tendency [1-2]. It can also present with wide range of clinical features including to neurological disorder. The neurological bleeding in dengue is interesting although it is no common. The neurological can be seen at any regions of the neurological system. However, an important site is subarachnoid space that can result in subarachnoid hemorrhage. Here, the author briefly reviews and discusses on an important tropical neurological clinical disorder, subarachnoid hemorrhage in dengue.

### Problem of subarachnoid hemorrhage due to dengue

Dengue can affect brain and this can lead to several neuropathologies that can result in death [3]. The involvement of brain can be by direct invasion of virus, as complications of dengue shock or due to bleeding disorder [1]. As noted, due to the bleeding tendency in dengue, internal bleeding is an important complication of dengue. This is due to the thrombocytopenia that is induced by immunopathological mechanism of dengue [4].

The bleeding in neurological system can be seen in dengue and the present focus is on subarachnoid hemorrhage in dengue. This condition is uncommon and has been sporadically reported in the literature. Of interest, in endemic area as Thailand, this condition has not been documented in the summarization of the neuropathology in dengue death cases [3]. Patey et al. firstly mentioned this condition in 1993 [5]. The case had a "focal subarachnoid hemorrhage that was associated with transient thrombocytopenia". In this case, there is no neurologic vascular malformation and the patient was confirmed to have a dengue hemorrhagic fever [5]. This condition can also be seen accompanied with other serious bleeding such as vitreous hemorrhage [6]. Of interest, this problem can also be seen in traveler. A fatal case was reported from Norway [7].

### Management of subarachnoid hemorrhage in dengue

For the clinical diagnosis, the signs and symptoms of subarachnoid

### Abstract

Dengue is an important tropical infection that can present with wide range of clinical features including to neurological disorder. The neurological bleeding in dengue is interesting although it is no common. Here, the author briefly reviews and discusses on an important tropical neurological clinical disorder, subarachnoid hemorrhage in dengue.

**Keywords:** Subarachnoid; Hemorrhage; Dengue; Tropical

hemorrhage can be seen and this is usually accompanied with clinical features of dengue hemorrhagic fever or dengue shock [8]. The confirmation is usually by imaging technology. Lee et al. recently noted that the two important laboratory findings among the indexed cases included early altered consciousness and profound thrombocytopenia [8]. For treatment of the case, the basic dengue fluid management is required and the proper management of subarachnoid hemorrhage according to general neurological guideline has to be done. However, most of the reported cases had delayed diagnosis and this leads to high mortality. In fact, the problem might be controlled if a good care of dengue is done to limit the extend of problem due to profound thrombocytopenia [1].

### Conclusion

Subarachnoid hemorrhage due to hemorrhage can be sporadically seen in tropical neurological practice. This condition can be serious and the proper management is required. Since dengue has its spreading endemic area to many new settings, physicians should have full awareness on this important atypical dengue presentation.

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