

The Role of Palliative Care in Human Rabies: Two Faces of Human Rabies in a Tertiary Hospital

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Abstract

Rabies is a deadly zoonotic encephalomyelitis with 99% fatality rate and contributes to 59 000 global deaths annually. This disease had been successfully eliminated from Malaysia in 1999 only to re-emerged in 2017. Since then, the cumulative total human rabies cases now stood at 70 with 63 deaths. Sarawak recorded 13 deaths from 15 rabies cases in 2023. In Asia, rabid dog bites contribute to 99% of human infections. After an average incubation period of 6 to 8 weeks, the infection manifests clinically as encephalitic rabies or paralytic rabies. Encephalitic rabies, also known as furious rabies, accounts for two thirds of cases and is characterized by hyperexcitability, agitation, hydrophobia and aerophobia. Meanwhile, paralytic rabies, or dumb rabies, which accounts for the remaining one third of cases, follows a less dramatic course with ascending lower motor neuron weakness with preserved consciousness until the preterminal phase. Human rabies is 100% preventable and good health seeking behavior upon animal bite is crucial in its prevention and control. We highlight two case reports of human rabies infection with different outcomes and the role of palliative care in both cases in Sarawak, Malaysia. The first case is a young man with encephalitic rabies who succumbed to the illness rapidly. Conversely, the second case is another young man with paralytic rabies who recovered with residual weakness. Both men received palliative care during their admissions to the tertiary hospital.

Keywords: Rabies; Encephalitis; Palliative care

Introduction

Rabies is a deadly zoonotic encephalomyelitis with 99% fatality rate and contributes to 59 000 global deaths annually [1]. This disease had been successfully eliminated from Malaysia in 1999 only to re-emerged in 2017. Since then, the cumulative total human rabies cases now stood at 70 with 63 deaths. Sarawak recorded 13 deaths from 15 rabies cases this year [2]. In Asia, rabid dog bites contribute to 99% of human infections. After an average incubation period of 6 to 8 weeks, the infection manifests clinically as encephalitic rabies or paralytic rabies. Encephalitic rabies, also known as furious rabies, accounts for two thirds of cases and is characterized by hyperexcitability, agitation, hydrophobia and aerophobia. Meanwhile, paralytic rabies, or 'dumb' rabies, which accounts for the remaining one third of cases, follows a less dramatic course with ascending lower motor neuron weakness with preserved consciousness until the preterminal phase [3]. Human rabies is 100% preventable and good health seeking behavior upon animal bite is crucial in its prevention and control [4,5]. We highlight two case reports of human rabies infection with different outcomes and the role of palliative care in both cases in Sarawak, Malaysia. The first case is a young man with encephalitic rabies who succumbed to the illness rapidly. Conversely, the second case is another young man with paralytic rabies who recovered with residual weakness. Both men received palliative care during their admissions to the tertiary hospital.

Methods

Case report one (Mr. AB)

Mr. AB, 28-year gentleman who was a lorry driver and previously well presented to Sarawak General Hospital with presyncope upon initiating his shower and an intense fear of drinking water for a day. He also had weakness and numbness involving his right upper limb. On further exploration, he had a category 3 dog bite on his right thigh after rescuing a stray dog from a presumed road accident 6 months ago in Siburan, a small town 30km south of Kuching. The status of the rescued

dog was unknown. He did not seek medical care for the dog bite and therefore did not receive post-exposure rabies prophylaxis. Besides that, he never receive any pre-exposure rabies vaccination prophylaxis.

On examination, his Glasgow Coma Score (GCS) was full, and he was calm. His right upper limb muscle power was reduced to 4/5 with hyperaesthesia. There was also a stocking-pattern reduced sensation at the right ankle. Reflexes were intact. He was notably hydrophobic and aerophobic. Urgent MRI brain revealed high FLAIR signal intensities at bilateral hippocampi, bilateral medial temporal lobes, and bilateral thalami, as well as posterior aspect of pons, which were suggestive of rabies encephalitis. There was no myelopathy noted. Subsequently his sputum, skin tissue biopsy from the nape of neck and cerebrospinal fluid sent for Rabies RT-PCR testing were reported as positive.

Case report two (Mr. CX)

Following a category 3 domestic dog bite 27 days ago over his right forearm, Mr CX, a 38-year-old office boy with no prior illness presented to the emergency department of Sarawak General Hospital with 2 days history of progressive bilateral lower and upper limbs weakness. Both of his pet dogs were not vaccinated against rabies and passed away within 2 days after the dog bite incident. The patient did not receive any post-exposure rabies prophylaxis following the dog bite event or any pre-exposure vaccination.

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On examination, his Glasgow Coma Scale (GCS) was full. His upper limbs power was 4/5 and lower limbs power was 3/5. His reflexes were absent despite reinforcement. There were no sensory nor cranial nerves impairment. Anal tone and bulbocavernosus reflexes were intact.

Lumbar puncture revealed normal opening pressure with normal cerebrospinal fluid analysis. MRI was done in view of acute flaccid paralysis. It showed T2W/DIXON hyperintensities along C2 to C7 suggestive of rabies infection and normal brain parenchyma. Subsequently, rabies RT-PCR for cerebrospinal fluid, saliva and urine samples were noted to be positive.

Results

Case report one (Mr. AB): He was admitted to the Infectious Disease Isolation Ward of Sarawak General Hospital. Shortly after admission, he developed neuropathic pain at C2 to T12 region with signs of autonomic instability such as persistent sinus tachycardia, hyperhidrosis and spiking temperature. In addition, he also experienced progressive breathlessness at rest with worsening anxiety. Palliative management was initiated for symptoms alleviation with initiation and titration of regular and PRN subcutaneous morphine for pain and breathlessness, gabapentin for his neuropathic pain and lorazepam for his anxiety in the context of breathlessness. He was given trial of intrathecal rabies immunoglobulin alongside his palliative care management, but his condition progressed.

Patient and his family were counselled early during his admission on his prognosis, the expected changes with diagnosis of furious rabies and goals of care which is palliation. He received his treatment in a quiet, air-conditioned single room. His wife and mother acted as rotating caregivers, providing him with skin care, oral care and were encouraged to pray with him at his bedside. Contact precaution were strongly reinforced to his family members and the nursing team.

On day three of admission, he clinically worsened with visual hallucinations and fluctuating consciousness. At night, he became confused and restless, pacing around in his room and spitting at health care professionals. After communicating with his wife, he was restrained transiently with consent, and administered haloperidol and midazolam boluses to support his symptoms and keep him sedated so that his restrains can be removed and he can be kept comfortable.

On the fifth day of admission, his condition deteriorated further, and he was actively dying. He was noted to be gasping with terminal secretions and anuric during review. He was switched to subcutaneous infusion of fentanyl, midazolam and hyoscine N-butylbromide. He succumbed to the illness on the same day. Arrangements were made for his family members to receive rabies vaccine and bereavement support (Figure 1).

Case report two (Mr. CX): Mr. CX was managed by a multidisciplinary team consisting of Infectious Disease, Neuromedical, General Medicine and Palliative Care team. After admission, his tetraparesis rapidly deteriorated to muscle power of 1/5. He also had bulbar palsy with frequent pooling of saliva and speech dysarthria. He notably became breathless. He was initiated on regular subcutaneous morphine, hyoscine N-butylbromide and oxygen support for his comfort. He received his nutrition and hydration via a nasogastric tube.

Mr. CX's cognition was intact and he participated in family conferences whereby he expressed his frustrations in losing his independence and although aware of his grave prognosis, he was hopeful for clinical improvements. He was thus given a trial therapy of intrathecal rabies immunoglobulin for by the infectious disease team



Figure 1: The role of palliative care for Mr. AB and his family.

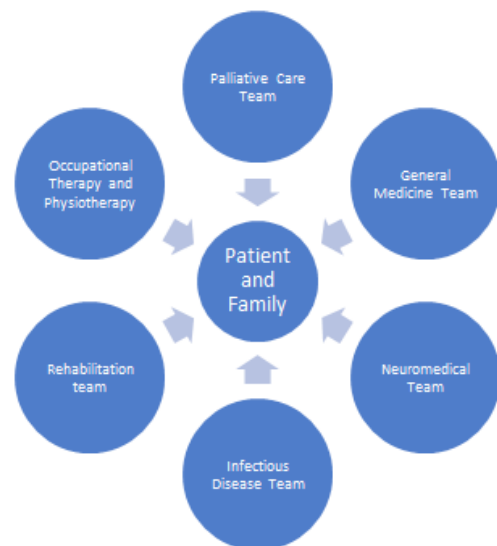


Figure 2: The multidisciplinary team approach for Mr. CX.

while his symptoms are managed by the palliative care team.

Within a few days of his trial therapy, his bulbar and skeletal limb weakness gradually improved despite remaining are flexic. He was weaned off his feeding tube and oxygen support. Moreover, his medications aimed at palliation, namely morphine and hyoscine N-butylbromide were tapered down gradually and off. He received physical therapy from the rehabilitation team and was discharged home after twenty tree days of ward stay via a wheelchair. His wife was arranged to receive rabies vaccination outpatient.

Mr. CX had an initial rapid deterioration in clinical course, followed by a gradual recovery. Palliative care was integrated early into his management plan with timely family conference and goals of care discussion. A year after discharge, he successfully returned to his work. His has residual lower limb weakness notably only if he is navigating up the stairs (Figure 2).

Conclusion

The two case reports reflect the rapidly evolving myriad of symptoms in patients with human rabies infection, whereby a multidisciplinary

team approach is important to support patients and families. Palliative care referral upon diagnosis of human rabies is important to alleviate the significant physical and psycho-socio-spiritual distress of patients and their families regardless of the outcome of the deadly disease.

As long as rabies infection remains endemic in Sarawak, it is imperative to train and educate all healthcare professionals in the role of palliative care in human rabies infection.

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