Differentiating paralytic rabies from post antirabies vaccine polyradiculoneuropathy

Sir,

The recent report of flaccid paralysis following anti-rabies vaccine (ARV) was interesting, where Behari et al describe the diagnostic dilemma in a patient presenting with flaccid paralysis following administration of ARV. They mention that measurement of rabies antibody titer in the serum and cerebrospinal fluid could help in differentiating paralytic rabies from post-ARV polyradiculoneuropathy (Guillain-Barre syndrome, GBS). However, I would like to make certain observations.

Firstly, there are several features that could be useful in differentiating paralytic rabies from polyradiculoneuropathy, which could be summarized as follows:

1. History of dog bite: In a person who has not been bitten by a dog (as in the case reported by Behari et al), there is virtually no possibility of rabies and the diagnosis of GBS is straightforward.
2. Incubation period: The mean incubation period in paralytic rabies is 49 days, as compared to 14 days in case of post-ARV neurological syndromes.
3. Clinical involvement: Sphincter disturbances and sensory symptoms (in addition to ascending flaccid paralysis) are common in paralytic rabies, which is not the case with post-ARV polyradiculoneuropathy. This could be explained on the basis of direct involvement of brainstem and spinal cord by rabies virus, proven by autopsy studies.
4. Disease progression: Paralytic rabies progresses rapidly with early respiratory paralysis and death ensues within 7-11 days of symptom onset in all cases. On the other hand, post-ARV polyradiculoneuropathy has a better outcome with conservative management or immunotherapy and the mortality is less than 10%.
5. Magnetic resonance imaging (MRI): MRI of the brain in paralytic rabies shows exclusive involvement of the gray matter including the basal ganglia, thalamus, pontine and midbrain nuclei. This is in contrast to the predominant white matter involvement in post-encephalitic acute disseminated encephalomyelitis. Moreover, in polyradiculoneuropathy; MRI is usually normal (as in the case reported by Behari et al).

Secondly, Behari et al treated their patient with steroids. However, significantly better therapeutic results have earlier been shown with cyclophosphamide as compared to steroids. Moreover, patients treated with steroids have a higher incidence of relapse of GBS. Plasmapheresis or intravenous immunoglobulins are better options for treatment of these patients.

S. Kumar
Neurology Unit, Department of Neurological Sciences, Christian Medical College Hospital, Vellore, Tamilnadu - 632004, India.
E-mail: drsudhirkumar@yahoo.com

References

Authors’ Reply

Sir,

We appreciate the comments and would like to clarify the issues raised:

1. History of dog bite: It is known that the most common cause of rabies is dog bite but in a small number of cases is caused by other animal bite as well. However, the dilemma arises in a patient bitten by dog and the question which arises is if the flaccid weakness is due to paralytic rabies or post antirabies vaccine polyradiculopathy.
2. Incubation period: Though the mean incubation period in paralytic rabies is 49 days, there are cases in whom symptoms of paralytic rabies occur earlier.
3. Sphincter disturbance and sensory symptoms if occur are helpful in diagnosing a case as paralytic rabies. However, it may not be present in early stages in most cases.
4. We agree that disease progression is rather rapid and downhill in paralytic rabies but is not useful at the time of presentation.
5. Abnormality on magnetic resonance imaging is observed in paralytic rabies and was emphasized in the report. The point that we wished to raise were the difficulties en-