Post Diphtheria – Tetanus vaccination Demyelinating episode

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Background and goals :
Post-immunisation encephalomyelitis, specifically Acute Disseminated Encephalomyelitis (ADEM), and optic neuritis have been documented after Tetanus vaccination and very few cases of encephalopathy post Diptheria –Tetanus vaccination. We report the case of a 33-year-old female who was admitted to our department with a 15 day history of new onset numbness in the hand, leg, upper neck and parieto-occipital area of the head on the right side. Her domestic male ferret had bitten her left thumb 45 days before symptom onset; patient was treated with antitetanic serum 12 hours after bite followed by 5-day course of vibramycin. Diphtheria – Tetanus vaccine was administered 4 days before numbness onset.

Methods :
Investigations included : CSF studies, serum immunology testing, brain, cervical and thoracic MRI.

Results :
On admission patient was afebrile, without clinical signs of infection. Brain MRI scan revealed a large (1.2cm x 0.7cm x 1cm) T2-hyperintense lesion in the left side of the pons with ring gadolinium enhancement, few atypical white matter lesions in frontal and occipital lobe and one lesion in the corpus callosum, whereas cervical and thoracic MRI scans were normal. CSF oligoclonal bands were absent and IgG Index was 0.82 (normal rate < 0.65). Serology tests for infectious agents, Connective Tissue Diseases and anti-MOG antibodies were negative. Patient received a 5-day course of intravenous methylprednisolone (1gr/24hr) with favorable response.

Conclusions :
To the best of our knowledge, this is the first documented case of post Diptheria – Tetanus vaccination demyelinating episode. Whether demyelination was an autoimmune response to ferret bite in the context of molecular mimicry, was triggered by vaccination or was a coincidental event remains to be clarified. Close follow-up of the patient will demonstrate whether this was a monophasic event or a Clinically Isolated Syndrome suggestive of Multiple Sclerosis.