CASE REPORTS

Post-influenza vaccine chronic inflammatory demyelinating polyneuropathy

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Abstract

We present a case of chronic inflammatory demyelinating polyneuropathy occurring subsequent to influenza vaccination in a 74-year-old gentleman with no previous neurological history.

Keywords: CIDP, influenza vaccine, neuropathy, autoimmune

Case report

A 74-year-old gentleman presented with a 10-week history of progressive right-sided facial paraesthesiae and weakness with dysarthria, ascending weakness of upper and lower limbs, and exertional dyspnoea. He had received a routine influenza vaccination two days before this. There was no recent illness or travel. His past medical history included coronary artery bypass grafting, gout and chronic renal impairment. His drug history included aspirin, digoxin, metoprolol, omeprazole, allopurinol and calcium supplementation. There was no significant family history, cigarette or alcohol use.

Physical examination revealed a midline sternotomy scar, right lower motor neurone facial weakness with dysarthria, symmetrical limb weakness (MRC grade 3/5 distally and 4/5 proximally) and areflexia. Spirometry showed an FEV1 of 1.37 l/min and FVC of 2.06 l. Serum haematology, biochemistry and immunology were normal other than chronically elevated urea (13 mmol/l) and creatinine (180 µmol/l). Chest x-ray showed previous cardiac surgery. MRI of the brain and spine were normal with no evidence of central demyelination on T2 and FLAIR images. Lumbar puncture showed an elevated CSF protein (1.66 g/l) but no other abnormalities. Blood, CSF and stool microbiology were all normal. Nerve conduction studies demonstrated proximal slowing with conduction block and loss of F waves, and a diagnosis of chronic inflammatory demyelinating polyneuropathy (CIDP) was made.

1 month later, he developed progressive bulbar dysphagia and dyspnoea and recurrence of limb weakness (MRC 3/5 globally). He did not respond to a second course of immunoglobulin but was then provided with steroid treatment which resulted in marked clinical improvement.

Discussion

CIDP is a heterogeneous condition because of its multifocal presentation and varied time course. It involves an autoimmune response against peripheral nerve myelin and is characterised by motor or sensory dysfunction in more than one limb for more than 2 months with hyporeflexia and characteristic CSF and electrodiagnostic test results [1]. Viruses and viral vaccines have been proposed as putative triggers in the pathogenesis of autoimmune disease [2] with postulated mechanisms including antigen mimicry, triggering self-reactive T-cell clones, and cytokine upregulation that may induce aberrant MHC class II expression [3–6]. Whilst autoimmune neurological sequelae of influenza vaccination have been described, the development of CIDP after influenza vaccination has not been previously reported [2]. The patient’s progressive deterioration soon after vaccination suggests that this case of CIDP was triggered by vaccination and it is interesting to note the relatively rapid onset of symptoms compared with the latent period of approximately 2 weeks between vaccination and the onset of Guillain-Barre syndrome (GBS) (which shares a similar aetiopathogenesis) in affected individuals [7, 8]. This case of CIDP is also somewhat unusual in its initial presentation with facial numbness and dysarthria, the prominent symptom of dyspnoea, and the unresponsiveness after the second
immunoglobulin course [9]. CIDP and GBS may be treated with intravenous immunoglobulin and plasmapheresis, and CIDP may also be treated with steroids. There is less evidence for steroid use but studies have failed to demonstrate a difference in efficacy among these three treatments; consequently, the choice is often based on availability, side-effect profile and individual patient response [10].

Vaccination has been proposed as one of the most impressive achievements of modern medicine, and compliance amongst populations is important to achieve herd immunity [2]. Rarely, individual patients may develop certain restricted patterns of autoimmune neurological damage and physicians need to be aware of novel presentations. The risk factors for such reactions remain unknown, and for the overwhelming majority of patients viral vaccines carry no risk of systemic autoimmune disease, and should be administered according to current recommendations.

Key points
• Viral vaccination may rarely precipitate autoimmune neurological damage.
• CIDP involves an autoimmune response against peripheral nerve myelin.
• CIDP is a heterogeneous condition with multifocal presentation and varied time course.

Conflicts of interest
None

References

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