Primary Pyogenic Ventriculitis caused by *Neisseria meningitidis* Serogroup Y: a Case Report

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Background

Ventriculitis is defined as an infection of the ventricular ependymal lining of the brain and is characterised by the presence of suppurative fluid in the ventricles.

It is a recognised complication of ventricular catheterisation and may also complicate ruptured brain abscesses and meningitis.

Primary pyogenic ventriculitis (PPV) is a rare clinical entity, with less than 25 adult cases reported in the literature.

To date only four cases of PPV in adults have been attributed to *Neisseria meningitidis*. We report the fifth case, the first in an Irish patient, and the first ascribed to Meningococcal serogroup Y.

Case Report

A 64-year-old female with a past medical history of diabetes mellitus, hypothyroidism, hypertension, dyslipidaemia, and previous breast cancer, presented to the Emergency Department with a one day history of agitation, diaphoresis, myalgias, and episodes of vomiting.

This was on a background of general unwellness over the preceding eight weeks with headaches, unsteady gait, and diaphoretic episodes.

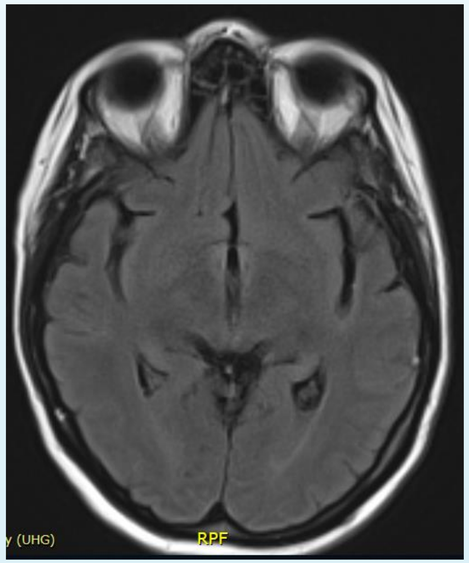
Case Report

Approximately six weeks prior to this presentation she had an episode of convulsive syncope for which she was worked up in the same institution. On examination she was afebrile, GCS 12, with no focal neurology or signs of meningeal irritation.

Laboratory results were notable for WCC 17^{9} cells/L, with neutrophilic predominance, and CRP of 401 mg/L. CT Brain was unremarkable. Blood cultures taken prior to antibiotics were negative.

MRI Brain revealed layering debris in the occipital horns of the lateral ventricles, concerning for pus within the ventricles. There was no periventricular enhancement on post-contrast imaging.

Unfortunately, lumbar puncture (LP) was delayed and only performed six days after commencement of antibiotics.



The LP revealed protein 2.43 g/L, glucose 0.8 mmol/L, RBCs 400 /cmm, and WBCs 2950 /cmm (50% polymorphs, 50% mononuclear cells). CSF culture was negative. CSF PCR was positive for *N. meningitidis*, with subsequent typing showing this to be Meningococcal serogroup Y.

The patient was commenced on high dose Ceftriaxone and made a significant clinical improvement. She completed a total of six weeks of antimicrobial therapy. Immune workup including complement function, immunoglobulin, and functional antibody studies was all normal.

Conclusion

We report the fifth case of PPV secondary to *N. meningitidis*, the first in an Irish patient, and the first attributed to Meningococcal serogroup Y.

PPV is a rare and heterogeneous clinical entity. The spectrum of presentation ranges from an indolent course to headache, fevers, and confusion, with signs of meningeal irritation occurring less commonly.

Treatment consists of targeted antimicrobials, though the optimal duration is unclear.