An unusual presentation of C-ANCA vasculitis

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Case report

A 54-year-old woman presented to casualty with left arm weakness, having had a preceding transient ischaemic episode in the same area and generalized flu-like symptoms a few days before admission. She had no traditional risk factors for vascular disease other than being an ex-smoker. Her National Institutes of Health Stroke Scale (NIHSS) score was 2 and an initial computerized tomography (CT) and subsequent magnetic resonance imaging (MRI) brain scan confirmed a small infarct of the posterior limb of the right Internal Capsule. Her symptoms worsened on Day 5 and she developed pronounced left arm, face and leg weakness with sensory and visual inattention. A repeat CT scan demonstrated a large right haemorrhage in the same area with intra-ventricular extension and mass effect and this change was thought to represent haemorrhagic transformation of the initial infarct.

Her initial investigations revealed normal electrolytes, renal and liver function tests, negative HIV, Hepatitis B and C screen, normal thrombophilia screen and a normal echocardiogram. Detailed history revealed a preceding prodrome of flu-like illness 6 weeks prior to presentation with few episodes of epistaxis, left eye inflammation and arthralgia involving both knees and small joints of her hands. She was subsequently found to be anti-neutrophil cytoplasmic antibody (ANCA) positive with a proteinase 3 (PR3) titer of 112 U/ml (0.0–2.0 U/ml) and had an elevated albumin/creatinine ratio 33.9 (0–3.5). She went to have a CT scan of her chest and sinuses which was normal, however further imaging [Magnetic Resonance Angiogram (MRA)] demonstrated an area of haemorrhagic transformation [Fig. 1] and cerebral small vessel beading [Fig. 2] suggestive of cerebral vasculitis.

In view of her raised PR3 titers, MR angiogram results and cerebrovascular end organ damage, she was commenced on intravenous cyclophosphamide therapy and Prednisolone to induce remission. Thus far, she is making considerable progress with her rehabilitation.

Discussion

This is a rare case of cytoplasmic ANCA (c-ANCA) positive vasculitis with stroke as the initial presentation and the brain as a threatened vital organ rather than the lungs or kidneys.1 In the early stages, the presentation of ANCA positive vasculitis can be very non-specific and diagnosis is difficult.2,3 The symptoms may range from arthralgia, arthritis, polymyalgia, neuropathy, episcleritis, microscopic haematuria and epistaxis.1,3,4 When a vital organ gets involved, diagnosis is much easier.3 Organ systems usually involved are kidneys and upper (nasal cavity and paranasal sinuses) and lower respiratory tract (lungs).1 Occasionally the skin, eyes, muscles, joints, nervous system and heart can be involved.1 Involvement of the central nervous system (i.e. the brain and spinal cord) occurs in <10% of cases.4

Current guidelines endorse a number of criteria, which need to be taken into account in order to make a diagnosis of systemic vasculitis.3 However, there remains considerable heterogeneity in the use of biomarkers, imaging and biopsy results and the universal application of these markers to all types of
systemic vasculitis remains circumspect. Current guidelines [British Society for Rheumatology (BSR) and British Health Professionals in Rheumatology (BHPR)] suggest all of the following to be fulfilled in order to diagnose vasculitis:

- Symptoms and signs characteristic of systemic vasculitis.
- At least one of
  - histological evidence of vasculitis with or without granuloma formation;
  - positive serology for ANCA [either PR3 or myeloperoxidase (MPO)]; and
  - specific indirect evidence of vasculitis (from angiography, MRI, CT imaging or neurophysiology)
- No other diagnosis that could account for symptoms or signs. Management depends on the severity of vasculitis and involves remission induction and maintenance therapy. There are three subgroups of management based on disease severity:
  - Localized/early with creatinine <150 µmol/l.
  - Generalized/organ threatening with Creatinine <500 µmol/l.
  - Severe, life/organ threatening with Creatinine >500 µmol/l.

In localized vasculitis remission induction treatment recommendation is with a combination of prednisolone and methotrexate or cyclophosphamide alone. In generalized vasculitis, remission induction is considered with prednisolone and cyclophosphamide (intravenous or oral) and in severe vasculitis, remission induction is with Prednisolone and Cyclophosphamide plus plasma exchange.

In patients with primary systemic vasculitis (PSV) who have achieved successful remission (usually between 3 and 6 months), cyclophosphamide should be withdrawn and either azathioprine or methotrexate in combination with oral steroids should be commenced. The emphasis is on early diagnosis and prompt treatment without delay because there is high mortality associated with PSV if left untreated. The introduction of cyclophosphamide in combination with prednisolone has resulted in significant improvement in mortality of systemic vasculitis (especially in Wegener’s granulomatosis) with a 5-year survival rate of 82%, although there remains considerable morbidity associated with both disease and treatment.

This case illustrates the importance of thinking about rare causes of common presentations of stroke in order to prevent the adverse outcome, to improve quality of life and reduce morbidity and mortality.

Conflict of interest: None declared.

References


