Hypertension, headache, and posterior reversible encephalopathy syndrome

I read with great interest the article (Subarachnoid hemorrhage due to ruptured intracranial aneurysm following posterior reversible encephalopathy syndrome - Case report) reporting a case of subarachnoid hemorrhage in a patient who presented with posterior reversible encephalopathy syndrome (PRES).

Neurological consequences of raised blood pressure are well-documented. However, it was not until 1996 that the term PRES was used to describe a specific pattern of symptoms and radiological findings that can be associated with hypertension.

It is reported that accelerated increase in blood pressure is of significance in developing PRES. However, in practice, it is not always clear from history or examination if such acceleration is present. In addition, time constraints do not allow for such trend to be observed. Moreover, blood pressure can be normal in patients with PRES.

PRES symptoms include headache and vomiting. There are also visual changes, altered mental status, and focal neurologic signs. Seizures are also a feature of this syndrome. Symptoms alone are not sufficient to make the diagnosis. Radiological findings of focal edema and the reversibility of presenting symptoms and radiological findings are a requirement of diagnosis.

The preferred method of investigation in PRES is by magnetic resonance imaging (MRI) scan. However,
in most acute departments, computed tomography (CT) scan with or without contrast is more readily available. CT can still show the radiological changes associated with PRES.[7]

The aim of radiological investigations when PRES is suspected should be to establish if the radiological characteristics are present. In addition, assessment of any acute intracranial pathology is important as is the demonstration of any abnormality which might indicate the need for more emergent and aggressive management. In this case report, the abnormality was an intracranial aneurysm which led eventually to subarachnoid hemorrhage.

This case report also emphasizes the significance of investigating acute headaches when associated with new-onset hypertension increased blood pressure even without focal neurological signs. However, it is not practical to perform a CT/MRI scan in every patient with headache and hypertension, in terms of both cost and safety. The Scottish Intercollegiate Guidelines Network produced guidelines of headache management; it recommends that only headache presenting as thunderclap and giant arthritis headaches need emergency investigations and management.[8] In the view of this case report, such approach does not seem to be sufficient.

Furthermore, from this report and a previous case report,[9] it seems that routine single-agent management of hypertension is not sufficient in all cases. It might be sensible to arrange for a short observational period to confirm that efficacy is recommended and might substitute the need for more aggressive scanning protocols.

To sum up, headache with new-onset increased blood pressure requires particular attention in terms of management, assessment of response to treatment, and keeping low threshold for radiological investigations. More research into developing a protocol to investigate patients with headache and hypertension presenting to the emergency department is required.