Author's response to reviews

Title: Posterior reversible encephalopathy syndrome in a child with cyclical vomiting and hypertension: A case report

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Author's response to reviews: see over
Dear Editor-in-Chief

We thank the Editors and Reviewers for their hard-work, thorough analysis and comments on this manuscript.

Outlined below is each comment and how we have adjusted the manuscript.

Reviewer 1

Comment 1
‘I agree that this case report is probably the first report of a hypertensive child with PRES presenting with cyclical vomiting. Avoid using the term cyclical vomiting syndrome as this implicates that the patient did not have any underlying cause’.

Response to reviewer
We thank the reviewer for this comment. We now use the term cyclical vomiting instead of cyclical vomiting syndrome.

Comment 2
Although you convey the message, use of better english will help readers. ‘The resolution of MRI lesions does not appear to equate with clinical recovery’ is unclear.

Response to reviewer
We thank the reviewer for the comment. We have tried to use better English throughout the text and have now changed the structure of the conclusion.
Changes made

The sentence 'The resolution of MRI lesions does not appear to equate with clinical recovery'

Has now been changed in the abstract and conclusion sections to the following:

PRES is a rare disorder in children. Early recognition of characteristic radiological features is key to the diagnosis as clinical symptoms may be non-specific or mimic other neurological illnesses. To the best of our knowledge this is the first case to report an association between PRES, cyclical vomiting and hypertension. Furthermore, in this case, the resolution of the abnormalities found on magnetic resonance imaging over time did not appear to equate with clinical recovery.

Comment 3

‘Can you add a couple of pointers in the MRI scan to demonstrate the lesion(s)?’

‘Acknowledge the radiologist.’

Response to reviewer and changes made

We have now added pointers in the MRI scans to demonstrate the lesions. We have added the radiologist to the authors list due to her significant contribution to the manuscript.

Comment 4

Would produce a list of investigations instead of free text (especially when almost all were normal).
Response to reviewer

We thank the reviewer for this comment. Producing a list would make this section more concise but we feel that using continuous prose is more in keeping with the journal style.

Reviewer 2

Comment 1

‘Report has been adequately referenced to include the published associations but lacks a reference of the various reported imaging changes in this condition. A brief discussion of this is important as diagnosis rests on the radiological findings.’

Response to reviewer

We thank the reviewer for this comment. We have now extensively discussed the various reported imaging changes in this condition in the case report and discussion sections of the manuscript.

Changes made

Imaging changes described in the case report are described in more detail in the second paragraph of the case report section as follows:

Magnetic resonance imaging (MRI) was performed on a further admission (Philips Intera 1.5T) and this demonstrated patchy areas of mainly subcortical high signal without mass effect, contrast enhancement or associated diffusion restriction. These
abnormalities were bilateral but asymmetrical, affecting the right cerebral hemisphere more than the left side. The high signal lesions were mainly located in the posterior brain, particularly the parieto–occipital lobes. No abnormality was seen in the posterior fossa or the basal ganglia. The radiological features were consistent with a diagnosis of Posterior Reversible Encephalopathy Syndrome (PRES) (Figure 1 and Figure 2).

Imaging changes described in the literature are described in more detail in the second and third paragraphs of the discussion as follows:

The diagnosis of PRES can be made on CT, but MRI is a more sensitive imaging modality. The radiological appearance of PRES does not seem to be influenced by the predisposing factor.[2] The most common abnormality on CT/MRI are focal regions of vasogenic oedema involving the white matter in the posterior cerebral hemispheres, often asymmetrically and most commonly involving the parieto–occipital lobes bilaterally (often in a watershed –type distribution). The medial occipital lobe structures are spared which distinguishes PRES from bilateral posterior cerebral artery infarcts. The posterior predilection of this condition has been ascribed to the fact that these vascular territories are sparsely innervated with sympathetic nerves.[7]

Lesions that are high signal on T2/FLAIR can also be seen in the frontal lobes, the temporal-occipital lobe and the basal ganglia and cerebellum. Patchy grey matter involvement is also recognised. MRI diffusion-weighted imaging (DWI) demonstrates that the areas of abnormality represent vasogenic oedema, which is usually completely reversible once therapy is instituted.[7] Rarely contrast enhancement can
occur, presumed to reflect disruption of the blood–brain barrier. In most patients who have repeat MRI scans after correction of hypertension, there is improvement or resolution of white-matter abnormalities, although hemorrhages (seen in approx 15%) causes permanent structural damage.[7]

Comment 2

‘The authors need to emphasis the ‘take home’ message i.e. that his is a rare disorder in children and that early recognition of characteristic MRI changes is key to the diagnosis as clinical symptoms may be non-specific and mimic other encephalopathic illnesses.’

Response to reviewer

We thank the reviewer for this comment. We now emphasise this in the conclusion section of the manuscript.

Changes made

The conclusion section has been changed to the following:

PRES is a rare disorder in children. Early recognition of characteristic radiological features is key to the diagnosis as clinical symptoms may be non-specific or mimic other neurological illnesses. To the best of our knowledge this is the first case to report an association between PRES, cyclical vomiting and hypertension. Furthermore, in this case, the resolution of the abnormalities found on MRI over time did not appear to equate with clinical recovery.
Comment 3

‘It would be desirable if region of interest is indicated on the MRI scan.’

Response to reviewer and changes made

We have now indicated the region of interest on the MRI scans.

Editorial requests and formatting comments

In addition to the above, the following required formatting concerns have been addressed:

Comment 1

Please include the ethnicity of the patient in the case presentation section of the manuscript.

Reply to comment and changes made

We have now included the ethnicity of the patient in the case report section.

Comment 2

Please include a conclusion section as the last section of the text. This should state what can be learnt from the case.
Reply to comment and changes made

We have now included a conclusion section as follows:

PRES is a rare disorder in children. Early recognition of characteristic radiological features is key to the diagnosis as clinical symptoms may be non-specific or mimic other neurological illnesses. To the best of our knowledge this is the first case to report an association between PRES, cyclical vomiting and hypertension. Furthermore, in this case, the resolution of the abnormalities found on MRI over time did not appear to equate with clinical recovery.

Comment 3

Please remove all extraneous data from the figure image, e.g., dates, time, institution/hospital name, etc.

Reply to comment and changes made

We have now provided new images with all extraneous data removed.

We hope that the above replies to the reviewer comments satisfy the requirements, if not please let us know. In anticipation of your response.

Yours Sincerely,

Zakareya Gamie,
Akheel Rizwan,
Frances G Balen,
Michael Clarke,