Reviewer’s report

Title: A patient with extensive cerebral calcification due to Pseudohypoparathyroidism: a case report

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Reviewer: Gemma Marcucci

Reviewer's report:

PHP is a rare disease, and it is important to describe as many clinical cases as possible. The clinical case described here is interesting, but some aspects need to be improved.

Revisions

- I suggest that a native english speaker reviews carefully the text.

Abstract:

- "His muscle power was grade four in all limbs": Which scale do you refer to?
- "elevated phosphate level of 9.5 mg/dl": to add normal range.
- "His 25 hydroxyvitamin D levels were only marginally low at 22.1 μg": is the unit of measurement correct?
- The conclusions of the abstract are generic and not very original.

Background and differential diagnosis:

- I suggest to read this recent article "Nat Rev Endocrinol. 2018 Aug;14(8):476-500. doi: 10.1038/s41574-018-0042-0. Diagnosis and management of pseudohypoparathyroidism and related disorders: first international Consensus Statement. Mantovani G, Bastepe M, Monk D, et al." in order to improve the "Background", as well as the "differential diagnosis" and "Discussion".

- Examination: "Muscle tone was slightly high in all the limbs.": did you use a specific scale of assessment?
Diagnostic assessment:

"an elevated phosphate level of 9.5 mg/dl (Normal 2.7-4.5 mg/dl) were noted": to add "serum phosphate level".

- "hypomagnesaemia": was urinary 24h excretion rates of magnesium evaluated?

- I think that biochemical exams should be inserted in a table, and in the text there should be the description.

- was MOC DEXA performed?

- an evaluation by a neurologist specialist was made?

Figure 1 and 2: to insert "arrows".

Therapeutic interventions:

- Doses e duration of calcium and magnesium supplementation should be added.

- "Serum ionized calcium levels gradually improved from 0.5 to 0.93 mmol/l. Inorganic phosphate levels reduced from 9.5 mg/dl to 5.3 mg/dl, intact PTH reduced from 76.3 pg/ml to 67.7 pg/ml, Serum magnesium levels improved from 1.4 mg/dl to 1.9 mg/dl. With the resolution of tetany CPK levels reduced from 1294 U/L to 574 U/L": when did these changes occur? during the follow up, how often were the biochemical examinations monitored? a graphic figure could be done.

- "Upon both clinical and biochemical response patient was discharged with calcium, magnesium and 1αcholecalciferol replacements.", which doses?

Discussion:

- "Seizures are thought to occur due to hypocalcemia and intracranial calcification that occurs in vascular and perivascular locations. PTH exerts its action through the PTH2 receptor in the brain and an endogenous brain specific hypothalamic neuropeptide has been identified as its natural ligand. Diminished activation of PTH2 receptor due resistance as seen in PHP is also presumed to result in neuro-psychological abnormalities as manifested as altered behavior in this patient.

It lacks references and a specific recent bibliographic research.

- was there a fragility fractures history?
"Perera et al described……": I suggest to add also a table with the all other cases described in literature.

"Conclusion" is too synthetic.

References:
- they should be expanded.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
No

Are the conclusions drawn adequately supported by the data shown?
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