Reviewer’s report

Title: Sawtooth fetal heart rate pattern associated with a favorable neurological outcome in an infant: a case report

Version: 0 Date: 05 May 2019

Reviewer: H Murray

Reviewer's report:

1. Do you believe the case report is authentic?

Yes

2. Do you have any ethical concerns? Please consider if local Institutional Review Board approval or ethical approval was obtained (if appropriate) and if the patient (or their parent or guardian in the case of children under 18) gave written, informed consent to publish this case and any accompanying images. A statement to this effect should appear in the manuscript.

Comments: I have no ethical concerns about this article.

3. Does the Introduction explain the relevance of the case to the medical literature?

Yes

4. Does the article report the following information? Where information is missing, please specify.

a. The relevant patient information, including:

   - De-identified demographic information (age, gender, ethnicity)

Yes

   - Main symptoms of the patient

No the long term outcome for the neonate is not presented
- Medical, family and psychosocial history

Not relevant

- Relevant past interventions and their outcomes

Not relevant

b. The relevant physical examination findings.

No the findings in the neonate are not included

c. Important dates and times in this case (if appropriate, organized as a timeline via a figure or table); if specific dates could lead to patient identification, consider including time relevant to initial presentation, i.e. initial presentation at $T = 0$, follow up at $T = 1$ month.

No issues noted

d. Diagnostic assessments, including:

   - Diagnostic methods
   - Challenges (e.g., financial, language/cultural)
   - Reasoning and prognostic characteristics (e.g., staging), where applicable

There is important data missing - see below

e. Types and mechanism of intervention

N/A

f. A summary of the clinical course of all follow-up visits

Comments: No there is important data missing about the long term followup for this baby
5. Is the interpretation (discussion and conclusion) well balanced and supported by the case presented?

Comments: No Given the fact that the previous information about the sawtooth pattern was ignored and there is no acidbase status for the neonate given this paper is seriously flawed

6. Is the anonymity of the patient protected? Please consider any identifying information in images such as facial features or nametags, whether the patient is named etc. If not, please detail below.

Yes

7. Is the Abstract representative of the case presented?

Comments: Yes

8. Does the case represent a useful contribution to the medical literature?

Comments: No

9. Additional comments for the author(s)?

This paper describes the sawtooth pattern as being rare. In fact it is often found for periods of time in labour, with the periods being self limiting. The case presented here is one of fetal hypoxia with the neonate requiring cooling. It is impossible to say that this baby is normal given the 66% association of neurological deficit that develops with HIE type 2 and 3 over a period of 2 years after birth. Noone can yet say this baby was normal. The lack of acidbase status for the baby is puzzling given the baby went to the NICU. That data is essential for publication.

In 2004, Modanlou HD and Murata Y. published their article on the sinusoidal pattern (J Obstet Gynaecol Res. 2004 Jun;30(3):169-80. Sinusoidal heart rate pattern: Reappraisal of its definition and clinical significance. They pointed out that the pattern was of ominous significance requiring further assessment of fetal condition by ultrasound. The authors of the submitted article do not seem to have taken the advice.
Therefore, given the severely compromised state of this baby and the lack of acidbase status and follow up data this paper is not acceptable or publication in my view

The CTG trace has no time scale.

**Level of interest**
Please indicate how interesting you found the manuscript:

An article of limited interest

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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Were you mentored through this peer review?

No