OBSTETRICS & GYNECOLOGY

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- Comments from the reviewers and editors (email to author requesting revisions)
- Response from the author (cover letter submitted with revised manuscript)*

**The corresponding author has opted to make this information publicly available.*

Personal or nonessential information may be redacted at the editor's discretion.

Questions about these materials may be directed to the *Obstetrics & Gynecology* editorial office: obgyn@greenjournal.org.

Date: Nov 01, 2019
To: "William W. Andrews" [redacted]
From: "The Green Journal" em@greenjournal.org
Subject: Your Submission ONG-19-1870

RE: Manuscript Number ONG-19-1870

Clinical Conundrum: Fetal Heart Rate Monitoring: Over Half a Century Later

Dear Dr. Andrews:

Your manuscript has been reviewed by the Editorial Board and by special expert referees. Although it is judged not acceptable for publication in Obstetrics & Gynecology in its present form, we would be willing to give further consideration to a revised version.

If you wish to consider revising your manuscript, you will first need to study carefully the enclosed reports submitted by the referees and editors. Each point raised requires a response, by either revising your manuscript or making a clear and convincing argument as to why no revision is needed. To facilitate our review, we prefer that the cover letter include the comments made by the reviewers and the editor followed by your response. The revised manuscript should indicate the position of all changes made. We suggest that you use the "track changes" feature in your word processing software to do so (rather than strikethrough or underline formatting).

Your paper will be maintained in active status for 14 days from the date of this letter. If we have not heard from you by Nov 15, 2019, we will assume you wish to withdraw the manuscript from further consideration.

REVIEWER COMMENTS:

Reviewer #1: This partial case report with opinion/editorial discusses the problem of the management of category II FHR tracings.

The authors state that after over half a century interpretation of FHR tracings remains as much of an art as it is a science. Another way to state this is that interpretation remains subjective without quantifiable evidence to guide management.

The authors could add discussion about the viewpoint that early randomized controlled trials comparing electronic FHR monitoring to intermittent auscultation shouldn't be used as evidence that electronic fetal monitoring lacks benefit because of the lack of management guidelines at the times these trials were performed, but that even recent NICHD workshops on FHR monitoring have created definitions of abnormalities but are unable to provide management guidelines because of the lack of evidence.

The authors state in lines 73-75 that EFM abnormalities have "stood the test of time". Just because we continue to evaluate FHR tracings based on these abnormalities doesn't prove that they have provided any benefit. The discussion should include information about the lack of decrease in cerebral palsy in term neonates over the past 50 years since the introduction of EFM. The authors state in lines 89-90 that "it is debatable whether electronic FHR monitoring has improved infant outcomes". Based on studies by Clark, Grimes and Nelson it appears clear that it hasn't.1-3

The authors are right to point out that the 5 tier system offers no benefit over the 3 tier system for reading tracings. They can also point out that the 5 tier system is so complicated it's not clear that a human can categorize tracings into 5 tiers without the use of software.

The authors present a concerning FHR tracing, but don't give the outcome for this case. If their point is to show that EFM lacks specificity in identifying a brain injured fetus they could present 2 cases with comparable tracings where 1 neonate had HIE and the other was normal.

References
1. Clark SL, Hankins GD. Temporal and demographic trends in cerebral palsy--fact and fiction. Am J Obstet Gynecol. 2003;188(3):628-633.
2. Grimes DA, Peipert JF. Electronic fetal monitoring as a public health screening program: The arithmetic of failure. Obstet Gynecol. 2010;116(6):1397-1400.
3. Nelson KB, Dambrosia JM, Ting TY, Grether JK. Uncertain value of electronic fetal monitoring in predicting cerebral palsy. N Engl J Med. 1996;334(10):613-618.

Reviewer #2: The authors present a common scenario during intrapartum management. It's a reminder that while ideally the practice of medicine is based on science, it is still very much a practice of the art of patient care.

Title: The title does not reflect the conundrum discussed based on the clinical scenario. It would be more informative if a term such as "still a mystery" is part of the title.

Clinical Vignette: There are other aspects of the case that would be important as potential etiologies or points of action. Since epidural analgesia and maternal hypotension can contribute to a category II tracing, the presence or absence of these factors should be included.

Conundrum: Are the interventions presented what actually occurred in the case? If not and they just represent author suggestions, then maternal position change would be another important action to take.

Data:

Patient Evaluation: No comment

Counseling Evidence: No comment

Course of Action: Lines 109-113 are too subjective to be of value to readers. Any one of 10 fetal heart rate features can meet Category II criteria. The authors need to suggest a clearer way to make a distinction between the two extremes of the Category II tracing they propose (e.g., a single feature versus multiple features)

Lines 115-133 pose many more questions than providing a course of action. The authors should include important actions to pursue such as assuring there is no maternal hypotension or using maternal positional change. There are other important factors that will affect decisions in this scenario but are not easy to handle in this manuscript. Clinicians may feel pressure to avoid exceeding benchmarks for cesarean delivery, and thus might delay this operative action in the hopes that the tracing will improve or labor rapidly progress to a vaginal delivery. At delivery, an umbilical cord blood sample for acid-base assessment should be obtained to help the clinician better understand their tracing interpretation.

Bottom Line: It would be helpful to include in this section another important helpful tip. That is to seek the opinion of a colleague when one encounters a concerning fetal heart rate tracing.

Figure: I am not sure that this figure is needed for this manuscript. There are too many variations of a category II tracing with some being less concerning than others. I think the authors should rely on clinicians having been in the situation that they describe and are familiar with the conundrum they have encountered.

Reviewer #3: This is a clinical conundrum piece regarding management of category II fetal heart rate tracings in the second stage of labor. Ways in which this manuscript might be improved:

CLINICAL VIGNETTE: Well written and chosen case. My only area for feedback is to please include scale for station. I presume you meant +2/5, but perhaps +2/3?

THE CONUNDRUM: I would add antipyretic to treatments listed.

Line 78-79: I certainly know what you mean here, but I am not sure adding "righteously so" is appropriate tone. I would recommend softening.

Lines 101-105: I know you are limited on references, but there have been many attempts on forming a treatment algorithm for category II tracings and to be honest, I feel most of them are pretty good. It might be worth highlighting one that you think is high quality:
1. How to Approach Intrapartum Category II Tracings. Timmins AE, Clark SL. Obstet Gynecol Clin North Am. 2015 Jun;42(2):363-75. doi: 10.1016/j.ogc.2015.01.013. Review. PMID: 26002172
2. Easy as ABC: A System to Stratify Category II Fetal Heart Rate Tracings. Penfield CA, Hong C, Ibrahim Sel H, Kilpatrick SJ, Gregory KD. Am J Perinatol. 2016 Jun;33(7):688-95. doi: 10.1055/s-0036-1571325. Epub 2016 Feb 12. PMID: 26871906
3. Standardizing the Response to Category II Tracings during Induction with Oxytocin: A Cost-Effectiveness Analysis. Chatroux LR, Savitsky LM, Zwerling B, Williams J, Cahill AG, Caughey AB. Am J Perinatol. 2017 Oct;34(12):1255-1263. doi: 10.1055/s-0037-1606605. Epub 2017 Sep 13. No abstract available. PMID: 28905354
4. A Standardized Approach for Category II Fetal Heart Rate with Significant Decelerations: Maternal and Neonatal

Outcomes. Shields LE, Wiesner S, Klein C, Pelletreau B, Hedriana HL. Am J Perinatol. 2018 Dec;35(14):1405-1410. doi: 10.1055/s-0038-1660459. Epub 2018 Jun 12. PMID: 29895077

Line 137: Sorry to be a contrarian, but I am not sure the improvements are that clear to me. Could you highlight some of them here?

Lines 148-152: I think these are all valid points, I would perhaps bulletize them rather than list them in a paragraph

Lines 152-153: I am not sure this sentence is needed, I think it can be left unsaid. It is a strange way to conclude the paper in my opinion.

EDITOR COMMENTS:

1. The Editors of Obstetrics & Gynecology are seeking to increase transparency around its peer-review process, in line with efforts to do so in international biomedical peer review publishing. If your article is accepted, we will be posting this revision letter as supplemental digital content to the published article online. Additionally, unless you choose to opt out, we will also be including your point-by-point response to the revision letter. If you opt out of including your response, only the revision letter will be posted. Please reply to this letter with one of two responses:
A. OPT-IN: Yes, please publish my point-by-point response letter.
B. OPT-OUT: No, please do not publish my point-by-point response letter.

2. As of December 17, 2018, Obstetrics & Gynecology has implemented an "electronic Copyright Transfer Agreement" (eCTA) and will no longer be collecting author agreement forms. When you are ready to revise your manuscript, you will be prompted in Editorial Manager (EM) to click on "Revise Submission." Doing so will launch the resubmission process, and you will be walked through the various questions that comprise the eCTA. Each of your coauthors will receive an email from the system requesting that they review and electronically sign the eCTA.

Please check with your coauthors to confirm that the disclosures listed in their eCTA forms are correctly disclosed on the manuscript's title page.

3. Our journal requires that all evidence-based research submissions be accompanied by a transparency declaration statement from the manuscript's lead author. The statement is as follows: "The lead author* affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained." *The manuscript's guarantor.

If you are the lead author, please include this statement in your cover letter. If the lead author is a different person, please ask him/her to submit the signed transparency declaration to you. This document may be uploaded with your submission in Editorial Manager.

4. Standard obstetric and gynecology data definitions have been developed through the reVITALize initiative, which was convened by the American College of Obstetricians and Gynecologists and the members of the Women's Health Registry Alliance. Obstetrics & Gynecology has adopted the use of the reVITALize definitions. Please access the obstetric and gynecology data definitions at https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

5. Provide a short title of no more than 45 characters, including spaces, for use as a running foot.

6. Only standard abbreviations and acronyms are allowed. A selected list is available online at http://edmgr.ovid.com/ong/accounts/abbreviations.pdf. Abbreviations and acronyms cannot be used in the title or précis. Abbreviations and acronyms must be spelled out the first time they are used in the abstract and again in the body of the manuscript.

7. The journal does not use the virgule symbol (/) in sentences with words. Please rephrase your text to avoid using "and/or," or similar constructions throughout the text. You may retain this symbol if you are using it to express data or a measurement.

8. The American College of Obstetricians and Gynecologists' (ACOG) documents are frequently updated. These documents may be withdrawn and replaced with newer, revised versions. If you cite ACOG documents in your manuscript, be sure the reference you are citing is still current and available. If the reference you are citing has been updated (ie, replaced by a newer version), please ensure that the new version supports whatever statement you are making in your manuscript and then update your reference list accordingly (exceptions could include manuscripts that address items of historical interest). If the reference you are citing has been withdrawn with no clear replacement, please contact the editorial office for assistance (obgyn@greenjournal.org). In most cases, if an ACOG document has been withdrawn, it should not be

referenced in your manuscript (exceptions could include manuscripts that address items of historical interest). All ACOG documents (eg, Committee Opinions and Practice Bulletins) may be found via the Clinical Guidance & Publications page at https://www.acog.org/Clinical-Guidance-and-Publications/Search-Clinical-Guidance.

9. Figure 1 may be resubmitted with the revision as-is.

10. Authors whose manuscripts have been accepted for publication have the option to pay an article processing charge and publish open access. With this choice, articles are made freely available online immediately upon publication. An information sheet is available at http://links.lww.com/LWW-ES/A48. The cost for publishing an article as open access can be found at http://edmgr.ovid.com/acd/accounts/ifauth.htm.

Please note that if your article is accepted, you will receive an email from the editorial office asking you to choose a publication route (traditional or open access). Please keep an eye out for that future email and be sure to respond to it promptly.

11. If you choose to revise your manuscript, please submit your revision through Editorial Manager at http://ong.editorialmanager.com. Your manuscript should be uploaded in a word processing format such as Microsoft Word. Your revision's cover letter should include the following:

* A confirmation that you have read the Instructions for Authors (http://edmgr.ovid.com/ong/accounts/authors.pdf), and
* A point-by-point response to each of the received comments in this letter.

If you submit a revision, we will assume that it has been developed in consultation with your co-authors and that each author has given approval to the final form of the revision.

Again, your paper will be maintained in active status for 14 days from the date of this letter. If we have not heard from you by Nov 15, 2019, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,

Mark A. Turrentine, MD
Consultant Editor for Clinical Conundrums

2018 IMPACT FACTOR: 4.965
2018 IMPACT FACTOR RANKING: 7th out of 83 ob/gyn journals

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[redacted]

November 13, 2019

RE: Manuscript Number ONG-19-1870

Dear Editor:

Please find attached our revised manuscript entitled, *Fetal Heart Rate Monitoring: Still a Mystery Over Half a Century Later* for consideration of publication in the *Clinical Conundrum Series* of the *Journal*. The revised manuscript includes editing in track changes from the originally submitted manuscript. We are grateful for the helpful comments of the Reviewers and have incorporated most of these in the revised manuscript. Also attached are our point-by-point responses to the reviewer comments.

There was a tendency of the reviewers to suggest inclusion of increased detail regarding interpretation and management of FHR tracings (which we find quite understandable). Although we have incorporated some of these suggestions, we wished to guard against creating a true review article and to remain within the stated spirit of the *Clinical Conundrum Series* (as indicated in the Instructions to Authors) and respect the space and reference limitations. We hope that the Editor will find this satisfactory.

Regarding Figure 1, there were conflicting suggestions between Reviewer #1 (who suggested expanding the number of figures) and Reviewer #2 (who suggested removal of the figure). We are concerned that the suggestion of Reviewer #1 takes the scope of the manuscript beyond the *Clinical Conundrum Series* and elected to remove the figure as suggested by Reviwer#2. However, because inclusion of the figure was originally suggested by the Editor, we have no objection to including Figure 1 and leave this decision to the Editor's discretion.

We have no objection to publication of the Point-by-point responses.

As the lead author, I affirm that this manuscript is an honest, accurate, and transparent account of the report of this hypothetical case and that no important aspects have been omitted. Because this is a hypothetical case intended for the *Clinical Conundrum Series*, it does not represent an actual 'study' and there are no data or components that have been withheld or discrepancies from an original study design. Neither is any study registration relevant.

Our intent is simply to highlight that, after decades of use, FHR monitoring may still present a clinical conundrum to obstetrical providers and to offer some straightforward caveats to apply when such circumstances arise. We will be delighted to provide additional revisions if requested and hope that the manuscript will be acceptable for publication in the *Green Journal*.

Regards,

William W. Andrews, PhD, MD

[redacted]

REVIEWER COMMENTS:

Reviewer #1:

This partial case report with opinion/editorial discusses the problem of the management of category II FHR tracings.

1. The authors state that after over half a century, interpretation of FHR tracings remains as much of an art as it is a science. Another way to state this is that interpretation remains subjective without quantifiable evidence to guide management.

   Thank you for the suggestion. The *Bottom Line* section of the manuscript has been edited accordingly.

2. The authors could add discussion about the viewpoint that early randomized controlled trials comparing electronic FHR monitoring to intermittent auscultation shouldn't be used as evidence that electronic fetal monitoring lacks benefit because of the lack of management guidelines at the times these trials were performed, but that even recent NICHD workshops on FHR monitoring have created definitions of abnormalities but are unable to provide management guidelines because of the lack of evidence.

   The manuscript has been revised accordingly. Thank you.

3. The authors state in lines 73-75 that EFM abnormalities have "stood the test of time". Just because we continue to evaluate FHR tracings based on these abnormalities doesn't prove that they have provided any benefit. <u>The discussion should include information about the lack of decrease in cerebral palsy in term neonates over the past 50 years since the introduction of EFM</u>. The authors state in lines 89-90 that "it is debatable whether electronic FHR monitoring has improved infant outcomes". Based on studies by Clark, Grimes and Nelson it appears clear that it hasn't.1-3

   The Reviewer certainly makes a valid point. Accordingly, we have removed the phrase, "stood the test of time" and have edited the manuscript to read, "basic elements of these tracings. . . <u>have remained largely unchanged over time</u>". We have also added the comment that "it is not apparent that electronic FHR monitoring has improved infant outcomes <u>in general or has reduced the frequency of cerebral palsy</u>. We removed one of the original references and chose to add the reference by Grimes and Peipert only because of the reference limitation of the *Clinical Conundrum Series* (8 total).

4. The authors are right to point out that the 5 tier system offers no benefit over the 3 tier system for reading tracings. They can also point out that the 5 tier system is so complicated it's not clear that a human can categorize tracings into 5 tiers without the use of software.

   We agree with the Reviewer and have edited the manuscript to read that "the 5-tier system also may add uncertainty and complexity."

5. The authors present a concerning FHR tracing, but don't give the outcome for this case. If their point is to show that EFM lacks specificity in identifying a brain injured fetus they could

present 2 cases with comparable tracings where 1 neonate had HIE and the other was normal.

We appreciate the suggestion of the Reviewer. However, the intent is to articulate the continuing "conundrum" of FHR interpretation along with some important caveats to consider when incorporating FHR interpretation into clinical decision-making. The *Clinical Conundrum Series* in the *Green Journal* is designed to be brief and not represent a "review" of the topic. Thus, the scope of the *Series* is necessarily limited. The target audience for this manuscript includes any provider responsible for FHR interpretation who hopefully have had more detailed training elsewhere and who have faced the "conundrum" of FHR tracing interpretation in their practice. This point was recognized by Reviewer #2 who recommended removal of the figure (number 9). We initially debated whether a figure was necessary, because the challenges of interpretation should be understood by this target audience. After reconsidering the issue at length, we have decided that the suggestion of the Reviewer, while certainly pertinent, may be beyond the scope of the article. As a compromise, we have decided (if approved by the Editor) to remove the original figure rather than expanding the number of figures.

Additionally, the case presented is hypothetical, but was designed to represent a common challenge faced by obstetrical providers as well as to conform to the required format for the *Clinical Conundrum Series* published by the *Green Journal*. Thus, there is not an infant outcome to report. Also, providers never know the infant outcome at the time clinical decisions are made incorporating FHR interpretations.

References

1. Clark SL, Hankins GD. Temporal and demographic trends in cerebral palsy--fact and fiction. Am J Obstet Gynecol. 2003;188(3):628-633.
2. Grimes DA, Peipert JF. Electronic fetal monitoring as a public health screening program: The arithmetic of failure. Obstet Gynecol. 2010;116(6):1397-1400.
3. Nelson KB, Dambrosia JM, Ting TY, Grether JK. Uncertain value of electronic fetal monitoring in predicting cerebral palsy. N Engl J Med. 1996;334(10):613-618.

Reviewer #2:

The authors present a common scenario during intrapartum management. It's a reminder that while ideally the practice of medicine is based on science, it is still very much a practice of the art of patient care.

1. Title: The title does not reflect the conundrum discussed based on the clinical scenario. It would be more informative if a term such as "still a mystery" is part of the title.

   Great suggestion. We have revised the title accordingly.

2. Clinical Vignette: There are other aspects of the case that would be important as potential etiologies or points of action. Since epidural analgesia and maternal hypotension can contribute to a category II tracing, the presence or absence of these factors should be included.

We agree with the Reviewer. However, as indicated by the "Instructions to Authors" for the *Clinical Conundrum Series*, we have attempted to limit the degree of detail regarding the numerous interventions that would be appropriate for a review article on FHR interpretation and management. Nevertheless, we have edited the manuscript to read, "...presence or absence of chorioamnionitis or meconium-stained amniotic fluid, ultrasound or Doppler results, maternal position, attention to maternal blood pressure, administration of an antipyretic, and many other factors."

3. Conundrum: Are the interventions presented what actually occurred in the case? If not and they just represent author suggestions, then maternal position change would be another important action to take.

   See response to number 2, above.

4. Patient Evaluation: No comment

5. Counseling Evidence: No comment

6. Course of Action: Lines 109-113 are too subjective to be of value to readers. Any one of 10 fetal heart rate features can meet Category II criteria. The authors need to suggest a clearer way to make a distinction between the two extremes of the Category II tracing they propose (e.g., a single feature versus multiple features)

   We agree with the Reviewer that many specific details regarding management of abnormal FHR tracings are not discussed in the manuscript. However, as stated above in the response to comment number 2, Instructions to Authors for the *Clinical Conundrum* series state that "the intend of this feature is not to do an exhaustive review of a topic but to concentrate on one query that has no straightforward answer (i.e., a clinical conundrum)" (Obstet Gynecol 2019:134:p.195). It is in that spirit that the scope of this article is limited and not intended to be a full review of FHR tracing evaluation or management. Rather, it is our intent to highlight that FHR tracing interpretation can often be a clinical conundrum and offer some important caveats that should be considered.

7. Lines 115-133 pose many more questions than providing a course of action. The authors should include important actions to pursue such as assuring there is no maternal hypotension or using maternal positional change. There are other important factors that will affect decisions in this scenario but are not easy to handle in this manuscript. Clinicians may feel pressure to avoid exceeding benchmarks for cesarean delivery, and thus might delay this operative action in the hopes that the tracing will improve or labor rapidly progress to a vaginal delivery. At delivery, an umbilical cord blood sample for acid-base assessment should be obtained to help the clinician better understand their tracing interpretation.

   Both attention to maternal blood pressure and position change have been added to the manuscript. We thank the Reviewer for recognizing the required limited scope of the manuscript submitted for consideration in the *Clinical Conundrum Series*.

8. Bottom Line: It would be helpful to include in this section another important helpful tip. That is to seek the opinion of a colleague when one encounters a concerning fetal heart rate tracing.

   This is an excellent suggestion and the manuscript has been revised accordingly.

9. Figure: I am not sure that this figure is needed for this manuscript. There are too many variations of a category II tracing with some being less concerning than others. I think the authors should rely on clinicians having been in the situation that they describe and are familiar with the conundrum they have encountered.

   The Reviewer's point is well taken. See our response to Reviewer #1, number 5 above. The figure has been removed (unless the Editor wishes to retain it).

Reviewer #3:

This is a clinical conundrum piece regarding management of category II fetal heart rate tracings in the second stage of labor. Ways in which this manuscript might be improved:

1. CLINICAL VIGNETTE: Well written and chosen case. My only area for feedback is to please include scale for station. I presume you meant +2/5, but perhaps +2/3?

   The manuscript has been revised accordingly. Thank you for the suggestion.

2. THE CONUNDRUM: I would add antipyretic to treatments listed.

   The manuscript has been revised accordingly. Thank you for the suggestion.

3. Line 78-79: I certainly know what you mean here, but I am not sure adding "righteously so" is appropriate tone. I would recommend softening.

   The phrase, "sometimes righteously so" has been removed in the revised manuscript.

4. Lines 101-105: I know you are limited on references, but there have been many attempts on forming a treatment algorithm for category II tracings and to be honest, I feel most of them are pretty good. It might be worth highlighting one that you think is high quality:

1. How to Approach Intrapartum Category II Tracings. Timmins AE, Clark SL. Obstet Gynecol Clin North Am. 2015 Jun;42(2):363-75. doi: 10.1016/j.ogc.2015.01.013. Review. PMID: 26002172 2. Easy as ABC: A System to Stratify Category II Fetal Heart Rate Tracings. Penfield CA, Hong C, Ibrahim Sel H, Kilpatrick SJ, Gregory KD. Am J Perinatol. 2016 Jun;33(7):688-95. doi: 10.1055/s-0036-1571325. Epub 2016 Feb 12. PMID: 26871906 3. Standardizing the Response to Category II Tracings during Induction with Oxytocin: A Cost-Effectiveness Analysis. Chatroux LR, Savitsky LM, Zwerling B, Williams J, Cahill AG, Caughey AB. Am J Perinatol. 2017 Oct;34(12):1255-1263. doi: 10.1055/s-0037-1606605. Epub 2017 Sep 13. No abstract available. PMID: 28905354 4. A Standardized Approach for Category II Fetal Heart

Rate with Significant Decelerations: Maternal and Neonatal Outcomes. Shields LE, Wiesner S, Klein C, Pelletreau B, Hedriana HL. Am J Perinatol. 2018 Dec;35(14):1405-1410. doi: 10.1055/s-0038-1660459. Epub 2018 Jun 12. PMID: 29895077

We agree with the Reviewer that many other references are available providing protocols for FHR interpretation. However, please read the response to Reviewer #2, number 6. In the spirit of the *Clinical Conundrum Series*, it is not our intent to do an exhaustive review of a topic (Instruction to Authors; Obstet Gynecol 2019:134:p.195). Rather, our goal was to highlight the continuing clinical conundrum of FHR tracing interpretation and to provide simple and wise caveats to be considered in such interpretations. As we mention in our response (number 5) to Reviewer #1 and as pointed out by Reviewer #2 (number 9), our target audience for this manuscript is likely be clinicians who have "been in the situation that they describe and are familiar with the conundrum they have encountered." The number of references is limited to 8. Among the references, we have included ACOG Technical Bulletin number 116 as an initial source document for those who wish to further their investigation into FHR interpretation.

5. Line 137: Sorry to be a contrarian, but I am not sure the improvements are that clear to me. Could you highlight some of them here?

   We have removed the sentence from the manuscript.

6. Lines 148-152: I think these are all valid points, I would perhaps bulletize them rather than list them in a paragraph

   We believe the Reviewer has a good point, but have been instructed that this is not within the *Clinical Conundrum Series* format. Thus, we will leave this recommendation to the Editor's discretion.

7. Lines 152-153: I am not sure this sentence is needed; I think it can be left unsaid. It is a strange way to conclude the paper in my opinion.

   We have removed this sentence as suggested and have revised *The Conundrum* section to reflect the fact that this is a hypothetical case that has been encountered by many clinicians. The original Figure (now removed; Reviewer #2, number 9) was selected to be reflective of the case. Because it is a fictitious case, there is not an infant outcome to report. Our point was to highlight the reality that the infant outcome is never known when clinical decisions are made based on FHR interpretation.

EDITOR COMMENTS:

1. The Editors of Obstetrics & Gynecology are seeking to increase transparency around its peer-review process, in line with efforts to do so in international biomedical peer review publishing. If your article is accepted, we will be posting this revision letter as supplemental digital content to the published article online. Additionally, unless you choose to opt out, we will also be including your point-by-point response to the revision letter. If you opt out of including your response, only the revision letter will be posted. Please reply to this letter with one of two responses:

A. OPT-IN: Yes, please publish my point-by-point response letter.
B. OPT-OUT: No, please do not publish my point-by-point response letter.

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Please check with your coauthors to confirm that the disclosures listed in their eCTA forms are correctly disclosed on the manuscript's title page.

3. Our journal requires that all evidence-based research submissions be accompanied by a transparency declaration statement from the manuscript's lead author. The statement is as follows: "The lead author* affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained." *The manuscript's guarantor.

If you are the lead author, please include this statement in your cover letter. If the lead author is a different person, please ask him/her to submit the signed transparency declaration to you. This document may be uploaded with your submission in Editorial Manager.

4. Standard obstetric and gynecology data definitions have been developed through the reVITALize initiative, which was convened by the American College of Obstetricians and Gynecologists and the members of the Women's Health Registry Alliance. Obstetrics & Gynecology has adopted the use of the reVITALize definitions. Please access the obstetric and gynecology data definitions at https://urldefense.proofpoint.com/v2/url?u=https-3A__www.acog.org_About-2DACOG_ACOG-2DDepartments_Patient-2DSafety-2Dand-2DQuality-2DImprovement_reVITALize&d=DwIGaQ&c=o3PTkfaYAd6-No7SurnLt5qpge1aKYwPQyBFS7c8AA0&r=pXtDUgE96enfobEPrD1U6DF3uyqakkTJDwh0R-Avp0A&m=h85R67HX9VXmxutmsYV9UOjgnb1pN0UsykfPufhLenc&s=7oTv7sgbPZoVO08H23EsRgTo_WM-6uszdOjLU3Wr3Eo&e=. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

5. Provide a short title of no more than 45 characters, including spaces, for use as a running foot.

6. Only standard abbreviations and acronyms are allowed. A selected list is available online at https://urldefense.proofpoint.com/v2/url?u=http-3A__edmgr.ovid.com_ong_accounts_abbreviations.pdf&d=DwIGaQ&c=o3PTkfaYAd6-No7SurnLt5qpge1aKYwPQyBFS7c8AA0&r=pXtDUgE96enfobEPrD1U6DF3uyqakkTJDwh0R-Avp0A&m=h85R67HX9VXmxutmsYV9UOjgnb1pN0UsykfPufhLenc&s=MASAz6K4U4kJ90gy7TQV2J9nDq5sBQ12AROyGXpbIT8&e=. Abbreviations and acronyms cannot be used in the title or précis. Abbreviations and acronyms must be spelled out the first time they are used in the abstract and again in the body of the manuscript.

7. The journal does not use the virgule symbol (/) in sentences with words. Please rephrase your text to avoid using "and/or," or similar constructions throughout the text. You may retain this symbol if you are using it to express data or a measurement.

8. The American College of Obstetricians and Gynecologists' (ACOG) documents are frequently updated. These documents may be withdrawn and replaced with newer, revised versions. If you cite ACOG documents in your manuscript, be sure the reference you are citing is still current and available. If the reference you are citing has been updated (ie, replaced by a newer version), please ensure that the new version supports whatever statement you are making in your manuscript and then update your reference list accordingly (exceptions could include manuscripts that address items of historical interest). If the reference you are citing has been withdrawn with no clear replacement, please contact the editorial office for assistance (obgyn@greenjournal.org). In most cases, if an ACOG document has been withdrawn, it should not be referenced in your manuscript (exceptions could include manuscripts that address items of historical interest). All ACOG documents (eg, Committee Opinions and Practice Bulletins) may be found via the Clinical Guidance & Publications page at https://urldefense.proofpoint.com/v2/url?u=https-3A__www.acog.org_Clinical-2DGuidance-2Dand-2DPublications_Search-2DClinical-2DGuidance&d=DwIGaQ&c=o3PTkfaYAd6-No7SurnLt5qpge1aKYwPQyBFS7c8AA0&r=pXtDUgE96enfobEPrD1U6DF3uyqakkTJDwh0R-Avp0A&m=h85R67HX9VXmxutmsYV9UOjgnb1pN0UsykfPufhLenc&s=cGRVDOjmHqPIFyvnyVscj0XTPEVHz6eXg2LmQUWtQ30&e=.

9. Figure 1 may be resubmitted with the revision as-is.

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* A point-by-point response to each of the received comments in this letter.

If you submit a revision, we will assume that it has been developed in consultation with your co-authors and that each author has given approval to the final form of the revision.

Again, your paper will be maintained in active status for 14 days from the date of this letter. If we have not heard from you by Nov 15, 2019, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,

Mark A. Turrentine, MD
Consultant Editor for Clinical Conundrums

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