Reviewer's report

Title: False positive morphologic diagnoses at the anomaly scan; marginal or real problem? A population-based cohort study.

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Reviewer: Juliana S Gebb

Reviewer's report:

This paper raises a very important topic in the field of fetal medicine. Historically, detection rates for fetal anomalies were so abysmal that all focus was placed on improving the competence and quality of routine ultrasounds in an effort to improve the sensitivity of prenatal diagnosis by ultrasound. Now that sensitivity has greatly improved, I agree that it becomes imperative to determine how frequently we "overcall" anomalies leading to patient anxiety and possibly unwarranted interventions. Additionally, as ultrasound equipment has improved over time, our ability to see structures has improved and this can sometimes lead to the suspicion of an abnormality when what we are really seeing is a normal process that we were previously unable to visualize.

Major Essential Revisions:
1. The introduction, particularly the first and second paragraphs needs to be edited so that it flows better... ie I believe that the authors are trying to say that there are more ultrasounds being performed despite constant, relatively small percent of anomalous pregnancies and therefore it becomes important to look at the false positive rate, but this needs to be more clearly stated.

Minor Essential Revisions:
1. The authors state that none of the false positive patients had a termination of pregnancy... does this mean that this group was mainly composed of suspected minor anomalies that can often resolve postnatally (ex pyelectasis or VSD)? in my opinion, this is the biggest flaw with this study (see comment 1 of discretionary revisions). Although it is not imperative for publication, I think the paper would be much stronger if the false positive rate for only major anomalies (ie those that threaten life, lead to significant disability or require major surgery) were included or at least if they were separated out. And to add to this, the authors mention that ventriculomegaly can resolve spontaneously, but it is also important to mention that VSDs resolve spontaneously and that it is common for a renal sono on day of life 1 to show no pyelectasis even when there is renal pathology since newborns are relatively dehydrated and it sometimes takes several days or weeks to again see the pyelectasis that was present in utero

3. Did any of the patients in the misclassification group terminate for what they thought was a major anomaly when in fact the fetus was found on pathology to only have a minor anomaly?
Discretionary Revisions:

1. It may be more clinically interesting to look at only major anomalies. The stress involved with telling the patient that the fetus has a major cardiac malformation is obviously much higher than that of telling the patient the fetus has mild pyelectasis or unilateral ventriculomegaly. In my opinion, the importance lies more with getting things right with the big diagnoses...if a kid has an extra renal ultrasound which is fine before leaving the hospital, it is of little importance compared to if the mother thought the fetus would have a major problem and it had radiation exposure for evaluation postnatally and nothing was found or even worse if the mother had a termination of pregnancy for a fetus that turned out to be pathologically normal. This being said, I do recognize that the renal ultrasound mentioned above does add financial burden and time to the medical system.

2. I am not sure I really understand the importance of detailing every misdiagnosis in fetuses with multiple malformations. If we know that the fetus has multiple anomalies and therefore a worse prognosis overall, is it imperative that all of the diagnoses be exactly right? I agree for example if a fetus was noted to have clubbed feet and then was misdiagnosed as also having a VSD or other cardiac malformation, this would be a problem because we would suspect that this fetus could have some sort of a syndrome. But if in fact, the fetus had a crooked spine and a limb reduction and a GU anomaly, I think it is less important that a suspected VSD be diagnosed perfectly. The authors rightly mention that the misdiagnoses in cases with multiple malformations would not have influenced medical management, so I guess I wonder what the point of classifying them as misdiagnoses is.

3. The tables should have a decreased number of variables. For example, Table two does not need to include number of ectopics and hypertension in my opinion.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: I declare I have no competing interests