Reviewer's report

Title: Genetic evidence of multiple loci in dystocia - difficult labour

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Reviewer: Brian Shaffer

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Discretionary Revisions

The authors attempt to identify susceptibility genes for labor dystocia in pairs of siblings who delivered their first child via cesarean.

An oversimplification of labor dystocia are due to irregularities with power (contractile forces produced during labor), passenger (macrosomic or malpositioned fetus), or the pelvis (irregular shape, contracted, etc). The authors correctly assert that a multitude of factors may influence and ultimately lead to labor dystocia. In addition, labor dystocia is associated with a number of poor maternal and neonatal outcomes. One vexing challenge for the obstetrician is determining who will have a uncomplicated vaginal delivery of a healthy neonate and who will undergo a long complicated delivery via cesarean. Such studies may eventually inform obstetricians and their patients of individual risks for dystocia and even cesarean delivery.

Overall, this is a well-written manuscript attempting to address a worthy but challenging topic and deserves to be published.

The authors performed genotyping via whole genome scanning and nonparametric linkage analysis as well as sequencing for two genes suggestive of linkage. Women with breech presentation were appropriately eliminated. However, so too were women with a contracted pelvis as well as neonates with a birthweight of >5kg. The reviewer questions whether such deliveries should be excluded since – for instance - variation in pelvic structure varies by race/ethnicity and may be responsible for a small proportion of labor dystocia.

Although it is novel, the reviewer also questions the re-sequencing of OXT versus phospholipase c-like or calcium-calmodulin dependent kinases as an abnormal product of OXT would easily be overcome in a clinical setting with use of synthetic oxytocin.

The authors appropriately delineate the other potential weaknesses of the study.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

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