

broadened. One can even say that, with the confirmatory diagnosis from the use of 3D TVS, the other imaging modalities (eg, computed tomography) may not have even been necessary to use in this case.

In fact, the authors of 1 of the references that was cited in this article<sup>2</sup> stated that “visualization of the ureters could be incorporated into standard gynecological pelvic examination without significant increase in the examination time.” Those authors stated that this could be done “particularly in women with a history of pelvic pain.” Moreover, we have many similar examples of the clinical value of 3D TVS for other routine gynecologic diagnoses. ■

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The authors report no conflict of interest.

#### REFERENCES

1. Lee SR, Yoon HN. Ureteral stone diagnosed with three-dimensional transvaginal ultrasonography. *Am J Obstet Gynecol* 2017;217:88.e1-2.
2. Pateman K, Mavrelou D, Hoo WL, Holland T, Naftalin J, Jurkovic D. Visualization of ureters on standard gynecological transvaginal scan: a feasibility study. *Ultrasound Obstet Gynecol* 2013;41:696-701.

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#### REPLY



We appreciate the insightful comments expressed by Drs Levine and Fernandez regarding our recent report on the ureter stone diagnosed with 3-dimensional (3D) transvaginal ultrasonography. We absolutely agree with the authors' opinion that the 3D sonography provided additional useful information to the 2-dimensional sonography. As Drs Levine and Fernandez commented, the imaging studies that were performed to confirm the diagnosis of distal ureteral stone in our case might not be needed in other cases, considering the additional cost and radiation exposure.

Although not necessary in every case, 3D sonography is highly useful in the differential diagnosis of congenital uterine anomalies because the coronal image of 3D sonography provides both the outline of endometrial cavity and external fundal contour of the uterus.

Some authors reported the accuracy of 3D sonography to be comparable with that of magnetic resonance imaging.<sup>1</sup> 3D sonography also enables doctors to confirm the relationship of the leiomyoma to the endometrium. The main body of leiomyoma can be located without performing a sonohysterogram, which can sometimes be painful for the patient. We also think the rendered 3D sonography is also helpful in the removal of intrauterine lesions, such as endometrial polyps or injuries, that are caused by impacted intrauterine devices with various shapes.<sup>2</sup> The more precise localization of intrauterine lesions enables targeted curettage without requiring an office hysteroscopy. However, we look forward to performing a more extensive study that will evaluate the usefulness of 3D sonography in the diagnosis of gynecologic diseases. ■

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#### REFERENCES

1. Graupera B, Pascual MA, Hereter L, et al. Accuracy of three-dimensional ultrasound compared with magnetic resonance imaging in diagnosis of Müllerian duct anomalies using ESHRE-ESGE consensus on the classification of congenital anomalies of the female genital tract. *Ultrasound Obstet Gynecol* 2015;46:616-22.
2. Graupera B, Hereter L, Pascual MA, et al. Normal and abnormal images of intrauterine devices: role of three-dimensional sonography. *J Clin Ultrasound* 2012;40:433-8.

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## Comment on: Predicting the difficulty of operative vaginal delivery by ultrasound measurements of the fetal head station



**TO THE EDITORS:** I read with interest the study by Kasbaoui et al,<sup>1</sup> who investigated the clinical usefulness of measuring the perineum-to-skull ultrasound distance to

predict the difficulty of operative vaginal delivery. However, I cannot agree with the conclusion reached. To perform operative vaginal delivery, I believe that the position of the

largest circumference of the fetal head is more important than that of the lowest part of the fetal head. We sometimes have encountered cases in which the position of the largest circumference was higher than the pelvic inlet, whereas the lowest part was descending because of molding of the fetal head, particularly in cases of occiput-posterior presentation. During forceps delivery, it is possible to feel the presence or absence of the descent of the largest circumference of the fetal head; however, during vacuum extraction, it may sometimes be misidentified in the presence or absence of the descent of the fetal head because of the advanced molding of the fetal head and/or advanced formation of caput succedaneum. Therefore, it may be more useful to examine the position of the largest circumference of the fetal head by transabdominal ultrasonography before operative vaginal delivery. ■

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#### REFERENCE

1. Kasbaoui S, Severac F, Aissi G, et al. Predicting the difficulty of operative vaginal delivery by ultrasound measurement of fetal head station. *Am J Obstet Gynecol* 2017;216:507.e1-9.

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#### REPLY



We thank Dr Suzuki for the comment about our article that showed that transperineal ultrasound measurement of the distance between the leading part of the fetal skull and the perineum was a useful supplementary tool to predict difficult operative vaginal delivery.<sup>1</sup>

We agree that it might be even more interesting to assess the station of the largest circumference of the fetal head, rather than the station of the leading part of the fetal skull, but do we actually have such a tool? To our knowledge, there is no study that has evaluated this kind of assessment thanks to a transabdominal ultrasound scan, and we believe it might be a pretty

challenging measurement. For a technique to be useful and usable, it must be simple and reproducible, which is the case with the perineum-to-skull ultrasound distance (PSUD).

The reliability of transvaginal assessment of fetal head station as defined by the American College of Obstetricians and Gynecologists classification is poor.<sup>2</sup> We believe that PSUD measurement offers a more objective and reliable assessment of fetal head station, even though it does not replace digital examination. We agree that the molding of the fetal head may lead to an incorrect assessment of fetal head station using our ultrasound technique, but the issue may be the same with the digital examination. However, the issue related to the clinical assessment in the case of caput succedaneum is overcome by ultrasound technique, since we measure the distance from the perineum to the fetal skull, not the fetal skin.

Finally, even though transperineal ultrasound scanning is not a perfect tool (but are there any?), PSUD measurement is simple and reliable, and we believe it is a useful supplementary tool to the usual clinical findings. ■

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#### REFERENCES

1. Kasbaoui S, Severac F, Aissi G, et al. Predicting the difficulty of operative vaginal delivery by ultrasound measurement of fetal head station. *Am J Obstet Gynecol* 2017;216:507.e1-9.
2. Dupuis O, Gaucherand P, Cucherat M, et al. Birth simulator: reliability of transvaginal assessment of fetal head station as defined by the American College of Obstetricians and Gynecologists classification. *Am J Obstet Gynecol* 2005;192:868-74.

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