

Beyond Itrasound Readiness: A Needs Assessment for Improving Care in Children with Ovarian Torsion

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Ovarian torsion is a time-sensitive emergency where ovarian loss may lead to long-term reproductive and health consequences.¹ The urgency of intervention is critical to preserve ovarian viability; however, establishing the diagnosis can prove challenging in the pediatric population due to nonspecific symptoms and difficulty with imaging smaller adnexal structures. Transabdominal pelvic ultrasound (TPUS) has emerged as the diagnostic procedure of choice in children due to its noninvasive nature and ready availability; however, a full bladder is often necessary to optimize visualization of the adnexal structures. Inadequate bladder filling and assessment of “ultrasound readiness” for TPUS can lead to suboptimal imaging, the need for repeat examinations, and an increased risk of ovarian loss due to diagnostic delay.

The central role that TPUS plays in diagnosing children with suspected torsion has prompted numerous quality and process improvement efforts to expedite ultrasound readiness. In this issue of *Pediatric Quality & Safety*, Dupont et al² report their single-center experience in successfully reducing time to TPUS through

several interventions designed to streamline diagnostic workflow in the emergency department. This effort follows on the heels of another recent report in *Pediatric Quality & Safety* by Park et al,³ where process improvement interventions were similarly implemented to improve TPUS readiness. Although these two efforts shared a common goal, each institution utilized a different, albeit complementary, set of process improvement interventions to achieve its goals.

Together, their collective experiences provide valuable insight into how clinical pathways can be optimized to streamline TPUS through standardizing order sets, improving education and awareness regarding existing workflow barriers, increasing nursing autonomy with early bladder scanning, and developing innovative methods for rapid bladder filling and assessment of TPUS readiness. Both groups should be commended for their rigorous and well-reported approaches using sound PDSA principles and thoughtful discussions around lessons learned to provide a roadmap that other institutions can use to emulate their success.

Although process improvement initiatives such as those reported by Dupont et al and Park et al provide valuable insight, they also serve to illuminate some of the limitations of the existing quality improvement literature. The comparison of different experiences (and the ability to systematically review them to identify generalizable best practices) is challenging due to the lack of standardization in reporting study methods and outcomes assessment. This includes variation in the use of (and definitions for) different process and outcome measures and in reporting how other diagnostic modalities, such as transvaginal ultrasound and magnetic resonance imaging, are (or should be) integrated into the diagnostic pathway.⁴ There is also a notable scarcity of patient-reported outcomes in the existing literature, which suggests a gap exists in our understanding of the patient and caregiver experience during the diagnostic and operative management phases. The use of more invasive procedures, such as the insertion of a urinary catheter for rapid bladder filling or the use of transvaginal ultrasound, may lead to more expeditious diagnosis but must be weighed against patient comfort and preferences for less invasive

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methods. Therefore, a more comprehensive approach to quality assessment is necessary, including evaluating shared decision-making and how this relates to patient and caregiver satisfaction. Evaluating new or modified diagnostic approaches for ovarian torsion should, therefore, not only focus on traditional process and outcome measures but also incorporate the patient experience as an essential balancing measure when more invasive diagnostic modalities are considered.

With the considerations above, several changes are needed to improve the utility of future studies exploring quality and process improvement interventions for ovarian torsion. The development of consensus measures with standardized definitions is needed to facilitate the comparison of outcomes across different studies and to better allow the pooling of results for a more global assessment of intervention-specific impact and generalizability. A collaborative partnership with patients and caregivers will be essential to identify and develop meaningful patient-reported outcomes, including measures assessing satisfaction with the shared decision-making process. Greater collaboration across gynecology, pediatric surgery, radiology, and emergency medicine should be facilitated to develop a more comprehensive understanding of the barriers that result in delays in care, from ED presentation to operative intervention. Concerning this latter consideration, the median time from presentation to imaging and imaging to the incision in 2023 was 3 and 3.5 hours, respectively, according to multicenter

data from the National Surgical Quality Improvement Program-Pediatric.⁵ I think we would all agree that we can and should do better than this, and these data would suggest substantial room for improvement in both the diagnostic and management phases of care. A committed effort to foster interdisciplinary collaboration, develop standardized process and outcome measures, and ensure sufficient patient engagement will enhance the timeliness of care and ensure that it is delivered (and measured) with a comprehensive approach to quality relevant to all stakeholders.

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