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Promoting Technology and Collaboration

Using Video Based Assessment to Maximize Operative Learning in Pediatric Surgery

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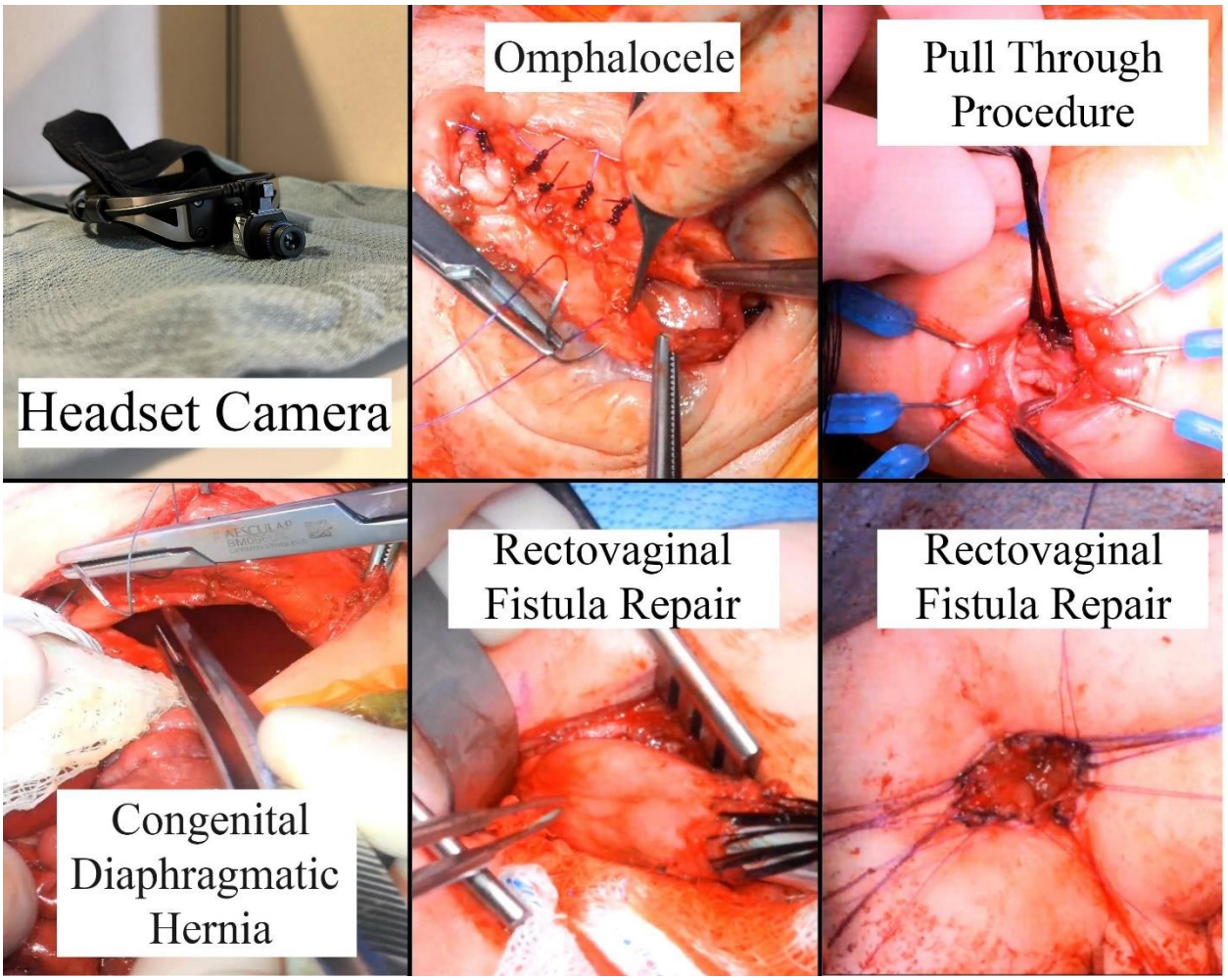
Background: Pediatric surgery (PS) encompasses a wide array of surgical procedures, addressing both common and rare conditions, such as esophageal atresia, imperforate anus, biliary atresia, congenital pulmonary airway malformations, and childhood tumors. These cases have a variable presentation and are often referred to as “index” cases in PS, requiring complex decision-making and clinical precision. Adequate exposure to these operations is essential for trainees to practice as pediatric surgeons. However, the growing pediatric surgical workforce limits individual experience with these rare conditions. Adapting training methods to maximize teaching opportunities is imperative.

Technology Overview: Video-based visual recording assessments enable third-party evaluations of trainee and teacher performances. Surgical videos demonstrating operative techniques have long been invaluable resources for trainees and faculty. Advancements in video recording technology allow cameras to be worn as glasses or headpieces, offering a surgeon’s perspective during operations. This technology enhances learning experiences by facilitating a detailed visualization of key procedural steps for both common and index cases.

Potential Application in Surgical Simulation and Education: Integrating video-based assessments into PS training can significantly improve educational outcomes. Regularly scheduled conferences with experienced and novice participants using these recordings can enhance information exchange, provide constructive feedback, refine teaching methodologies, and improve surgical decision-making process. This dynamic, interactive method of reviewing surgical techniques maximizes the learning potential of every index case. Each surgeon has their own way of intraoperative instruction. Application of video-based education can potentially advance and study surgical teaching.

Potential Opportunities to Collaborate: Video-based education in PS offers the potential to collaborate developing AI-driven analytics that assess surgical performance, create virtual reality and augmented reality simulations, and improve telemedicine and remote mentorship. Ultimately, improving operative efficiency, ergonomics, and quality of task completion. These tools can be important adjuncts in training, ensuring pediatric surgeons are best prepared for complex and challenging surgeries.


Headset Camera
Omphalocele
Pull Through Procedure
Congenital Diaphragmatic Hernia
Rectovaginal Fistula Repair
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