Application of the college of American pathologists guidelines for virtual microscopy validation: A pediatric pathology practice experience
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Virtual microscopy is rapidly emerging as a key technology for managing archival material and sharing consultations electronically. Recently, the College of American Pathologists (CAP) published their first guidelines for validating the use of virtual microscopy for clinical cases. These guidelines do not include technical specifications for software or hardware components. Therefore, we attempted to validate virtual microscopy for clinical evaluation of surgical pathology and cytopathology specimens at our pediatric hospital using currently available standard slide scanning resources, and computer resources currently available to the pathologists. To complete the validation according to the CAP guidelines of representing our case material, we selected a combination of consecutive cases and select cases in specific less common diagnostic categories. Our validation process included both surgical and cytopathology cases, divided among the nine pathologists who had previously completed clinical evaluation of the glass slides. Overall, diagnostic correlation was high between glass slide diagnoses and the corresponding virtual slide reviews. For surgical pathology specimens, small biopsies were scanned at 40x objective magnification based on pathologist feedback of the virtual slide evaluation. Cytology specimen evaluation was challenging due to the specimen thickness. Rarely, cytology slides which were extremely paucicellular were not able to be imaged for evaluation. We believe that validation of virtual microscopy for clinical evaluation of most surgical pathology specimens can be accomplished with current standard scanning and computer resources.

Biography
Michael Arnold completed his M.D. Ph.D. at the University of Texas Southwestern Medical Center at Dallas. He completed his Anatomic Pathology Residency at the National Institutes of Health, and a fellowship in Pediatric Pathology at Nationwide Children’s Hospital. He is currently an Assistant Professor of Pathology at Nationwide Children’s Hospital and The Ohio State University College of Medicine in Columbus, Ohio.

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