

Introduction

To enhance surgical pathology education and allow residents to self-assess their progress, a pilot effort was made to twice a year administer a slide exam simulating the microscopic component of the American Board of Pathology (ABP) anatomic pathology (AP) examination to a cohort of residents.

Methods

The subjects were pathology residents in a mid-size academic program typically consisting of 12 residents. The quizzes were held twice a year from fall 2019 to fall 2021. In the fall of 2019, the exam consisted of 20 glass slides selected from our departmental archives with accompanying history for which the residents were required to provide a free text diagnosis. After the onset of the coronavirus pandemic, the exam was transitioned to virtual microscopy using whole slide images selected from publicly available cases on PathPresenter.net. The answers of the trainees were graded in comparison to the clinical diagnoses. Throughout the effort, cases were selected from a variety of subspecialties to parallel the published ABP AP exam “blueprint.” (Figure 1A)

The residents’ opinions of the exercise were anonymously assessed via a survey.

Results

Overall, resident performance roughly correlated with post-graduate year with a gradual improvement in performance every year (Figure 2). All residents agreed (with 84.1% of them “strongly” agreeing) that this exercise benefited their education (Figure 3).

After two years of seasonal examinations, there was an increasing trend showing more residents, including junior ones, becoming more confident in their preparation for the anatomic pathology board exam.

These virtual exams are freely available for public use (Figure 1D, <https://schaberg.faculty.ucdavis.edu/quizzes/>).

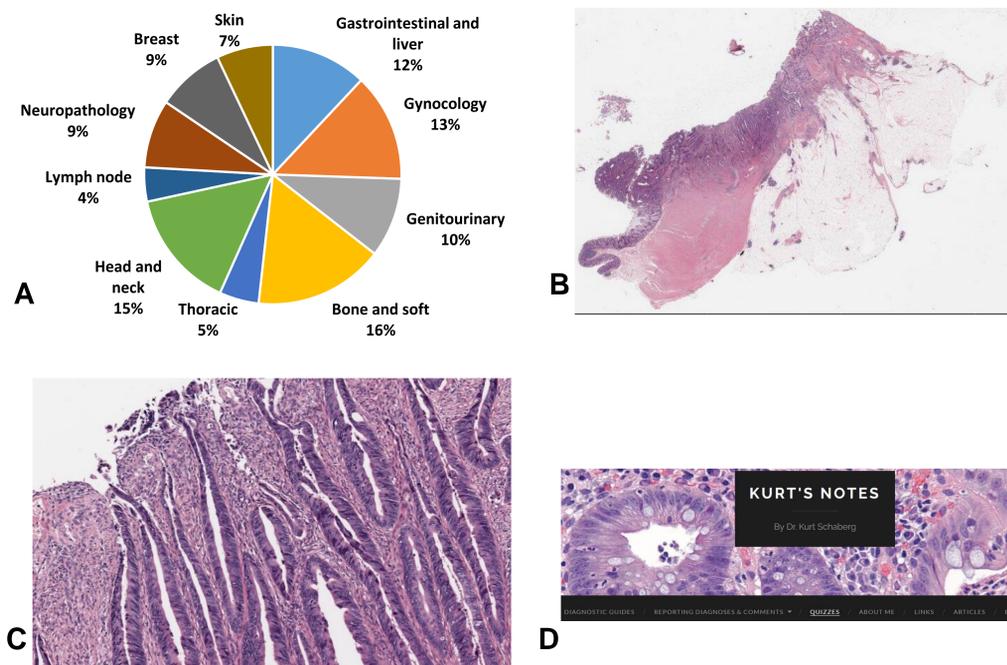


Figure 1. The spectrum of cases selected and application of digital pathology in this virtual exam. A. The percentage of different subspecialties in this pilot effort. B-C. Application of digital pathology to virtual exams; B and C, 1x, 5x, respectively. D. The freely available website providing accessibility to public users.

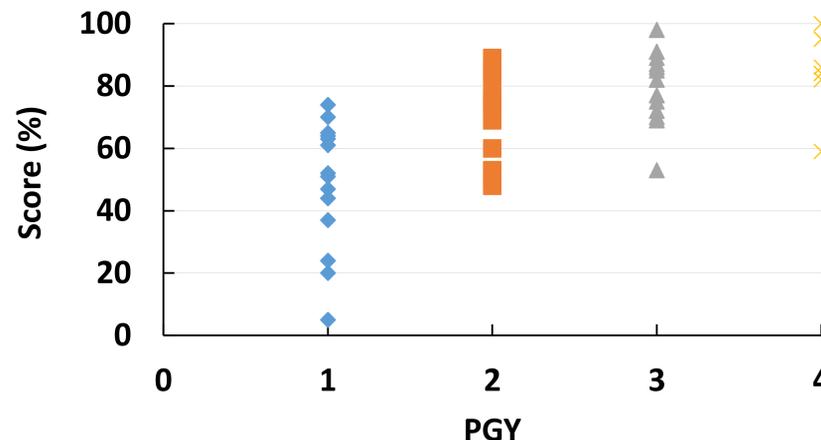


Figure 2. Resident slides quiz performance. Distribution of exam scores (y-axis) by resident seniority (x-axis).

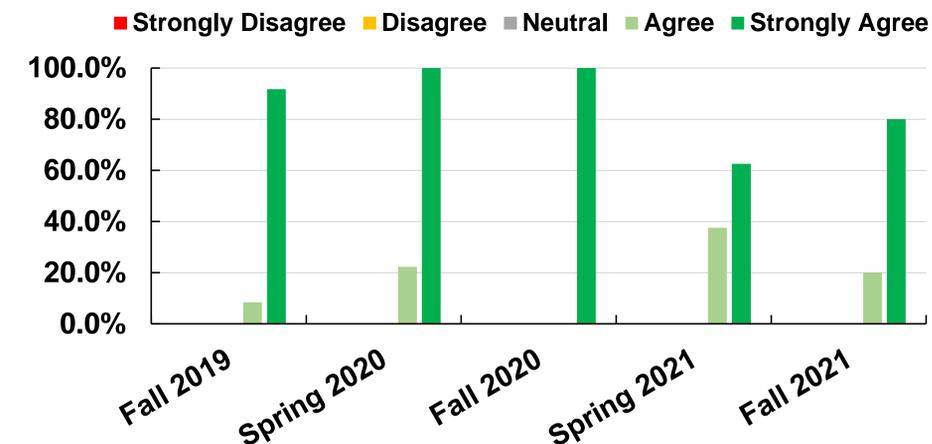


Figure 3. Resident satisfaction with the slide exam. The residents’ answers to “If this exercise benefits your education?”

Discussion

Though the sample size in this study is small, it demonstrates a valuable “proof of concept,” that regular administration of a slide exam to residents can be used to help residents assess their longitudinal progress and help them feel more confident in their preparation and training for board exams.

Overall, exam performance improved and correlated with post-graduate year. Interestingly, the most variability in exam performance was amongst PGY-1 trainees, potentially due to the diverse backgrounds and differing exposure to pathology amongst our trainees. Conversely, the least variability, and often best performance, was seen amongst PGY-4 trainees.

The use of whole slides and open-ended questions also more closely mirrors clinical practice, potentially providing insight into clinical preparedness than other assessment methods.

In this pilot effort, we also utilized newly developed education platforms to improve the efficiency and accessibility of medical education. All the past quiz questions and virtual slides are easily accessible at a public website ([kurtsnotes.net](https://schaberg.faculty.ucdavis.edu/quizzes/), Figure 1D) which also contains well compiled study materials.