00463 Evaluation of the Leica Aperio AT2 Slide Scanner for Histopathology Laboratory

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Aims: Whole slide imaging (WSI) system is a technology that creates high-resolution, whole slide digital images from microscope glass slides by utilizing digital pathology scanner. When the system is integrated with advanced software applications, the digital images can be viewed on a computer and facilitates telepathology for diagnosis, consultations and remotely interpreting frozen sections. The aim of our study is to evaluate the Leica Aperio AT2 slide scanner by accessing the image quality, reproducibility of the scanner in terms of scan success rate, scanning time and image storage. In the future, we intend to integrate WSI system into our workflow for diagnostic purposes and archiving of cases.

Methodology: A total of 1100 Haematoxylin & Eosin (H&E) slides and 100 Immunohistochemistry (IHC) slides were scanned by the Leica Aperio AT2 slide scanner over a period of one month. A snapshot was performed before the actual scanning to achieve better focusing. After that, the slides were scanned overnight at either 20X or 40X magnifications. The following day, the image quality was examined and the scan success rate and scan time were recorded.

Result: Out of 1200 glass slides scanned, the scan fail rate was about 2%. When the slides were scanned at 20X, it took about 2 mins per slide and the image size was around 350 MB on average. For scanning at 40X, three times the amount of scan time and storage space were required. As the slides were dry adequately and clean, no breakage of glass slides were encountered.

Conclusion: For rendering accurate clinical diagnosis, scanning histology slides at 20X is sufficient. Based on our departmental requirements, WSI system can provide an alternative for archiving and retrieving cases as this will allow the improvement of operational efficiency and reduction of laboratory expenses.