

Success Story: Using Digital Pathology to Enhance Tumor Board Meetings in a Community Hospital

Challenge: Tumor Board preparation and presentation was time consuming and cumbersome. This led to inefficient use of staff and restricted flexibility for the pathologist during case presentations.

Solution: Aperio's digital pathology solution incorporating ScanScope® system and Spectrum Plus™ information management software streamlined the preparation and improved the experience of tumor board presentations for both the pathologists and the attendees.

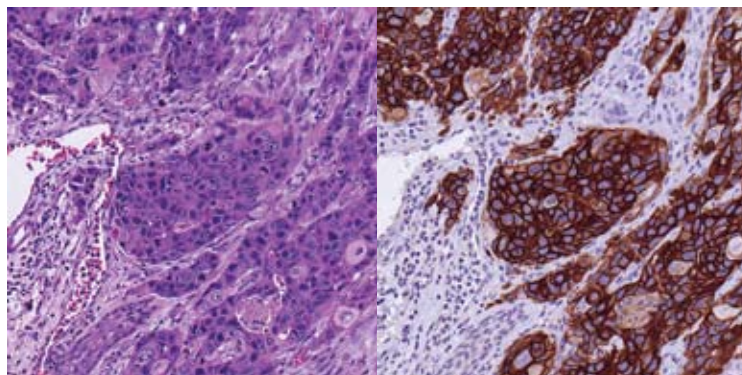
Background & Challenges

Laboratory Diagnostics Medical Group, which consists of six pathologists, provides anatomic pathology services for two sites of a five-hospital system in San Diego, California. A breast and general tumor board is held each week in the main facility.

Preparation for tumor board proved time consuming and cumbersome for both the staff and the pathologists. Staff involvement associated with pulling reports and slides for six to eight cases took an average of 1 hour 45 minutes each week. Pathologist review and photographing areas of interest to present at tumor board averaged a little over 2 hours per week. Frequent inability to access material for cases from outside institutions and the difficulty or inability to prepare photographs for last minute add-on cases extended the preparation time in many instances.

Time was also wasted in photographing cases that were bumped from tumor board presentations as these cases were then deleted from the files and had to be re-photographed and presented the following week.

Presentations at tumor board had several shortcomings. Foremost was the quality of low power images which received the lowest ranking by pathologists of any variable in the presentation. Another issue noted was the lack of flexibility by not having the correct photograph to answer a question that was raised by other clinicians attending the tumor board.



Digital Pathology provides the ability to show whole slide images side-by-side, thus enhancing presentation capabilities. Shown (left to right): H&E, HER2

Solution

The pathologists expressed an interest in digital pathology and agreed to participate in a pilot study using Aperio technology to test and measure the effectiveness of digital pathology as applied to tumor boards in a community hospital. By utilizing a ScanScope® scanner and Spectrum Plus™ information management software, four goals were outlined to be accomplished with the pilot. These included:

- Streamlining the preparation – making it less time consuming, more efficient, and less cumbersome and stressful
- Improving the experience of the tumor board – enabling real-time flexibility by showing any region of a slide and providing better information by showing higher quality images

- Improving satisfaction of all parties – pathologists, other clinicians and staff
- Identifying potential enhancements to digital pathology hardware or software that could improve its application for tumor boards

A 17-week study was conducted in the summer and fall of 2007. Eight

weeks were dedicated to collecting data on existing processes, the final nine weeks to collecting data using the digital pathology technology.

Surveys were performed with pathologists and administrative staff each week to measure pre- and post-Aperio technology

intervention efficiencies and improvements related to preparation and presentation. In addition, pre- and post-pilot surveys were completed with clinicians attending tumor board.

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- Dr. Stephen Carlson, Medical Director, LDMG

During the pilot, the scanning of the slides to be presented was performed by an administrative staff member. Because the assistant had no specialized training, it was important that the scanner be both easy to operate and fast. With its one-touch scanning capabilities and sub-2-minute scanning times, the Aperio ScanScope CS was the optimal choice. In addition, the Spectrum Plus information management software allowed easy archive and retrieval of digital slides for both current and past tumor boards.

Presenting digital images at tumor board was enhanced by the use of Aperio's ImageScope® viewing software. The viewing software provided the pathologist with additional capabilities not possible with photographs, including whole slide images, side-by-side viewing of more than one image at a time, and the ability to annotate sections of the images with the click of a mouse.

Results & Benefits

Aperio's digital pathology system successfully helped the pilot meet its goals.

Satisfaction of all parties, including non-pathologist clinicians who attended tumor board, improved. Consensus was reached that the digital pathology system was preferred over the previous method.

The overall impact on the preparation process was very positive.

- The process of preparing for tumor boards became more efficient for the pathologist and the staff
- Pathologists saved an average of one hour per week in preparation, thus cutting their time by 50%
- Ratings improved significantly for the staff as the process was less stressful and chaotic and the hardware and software were easier to use

For the pathologists, streamlining the process to make it more time-efficient was of critical importance. As explained by LDMG Medical Director Dr. Stephen Carlson, “Less time was required with technical/photography preparation, so more time was available to familiarize myself with the content of the path report”.

The use of digital slides for the presentation at tumor board was also overwhelmingly successful. “Having a whole slide to show at tumor board allows for a much better experience than a few photos of selected areas” noted pathologist Dr. Bernard Chang. Image quality or photographs used previously had been rated poorly. During the pilot, scores on image quality and other key variables improved, with image quality improving the most. The experience of the tumor board improved as the pathologists were better able to demonstrate their findings and respond to questions.

In addition to improved satisfaction by pathologist during presentations, other attending clinicians noted they preferred whole slide images as they gave a better overview of the pathology.

Additional benefits were realized:

- Ability to scan and present last minute add-on cases which were difficult to handle with the conventional preparation system
- Archiving of cases that were not presented at tumor board provided the ability for use the following week, thus saving pathologist and administrative time

Next Steps

LDMG is permanently implementing digital pathology for its tumor board presentations. The pathologists are also interested in extending the use of the ScanScope system and Spectrum Plus information management software to support additional clinical programs including digital slide conferencing along with archive and retrieval related to quality assurance programs.

About Aperio

Aperio is digitizing pathology. We provide systems and services for digital pathology, which is a digital environment for the management and interpretation of pathology information that originates with a digital slide. Aperio's award-winning ScanScope® slide scanning systems and Spectrum™ digital pathology information management software improve the efficiency and quality of pathology services for pathologists and other professionals. Applications include education, remote viewing, archival and retrieval, basic research, and image analysis.