



Telepathology network in the Pomerania: Evaluation and acceptance study of mamma biopsy applied virtual slides

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Abstract

Introduction: In the Euro region Pomerania a large telepathology network has been set up between most pathological institutes over the last years.

Methods: Under the responsibility of the POMERANIA E.V. and help of Government of Mecklenburg-Vorpommern 5 hospitals were joined together. Between these affiliated facilities dynamic Carl Zeiss telepathology systems (Axiopath) were installed in the past for telepathology sessions and intraoperative diagnostic.

For the further improvement of the tumour care of patients we attend to use digital slide technology to speed up remote diagnosis and second-opinion consultation. Before to introduce this modern technology for the routine work, we have perform an evaluation and acceptance study with the participations of pathologists from these locations.

For these study 223 cases of mamma biopsy were used. All biopsies were taken and routinely diagnosed in years 2006 and 2007, during screening action against mamma carcinoma in Mecklenburg-Vorpommern. All original glass slides, included additional stains and immunohistochemistry, were digitized with the MIRAX DESK.

One hundred cases were randomly chosen for this study. The mean number of slides/case was 6.5 and number of slides in individual case has varied from 3 to 17.

Two cohorts of the same virtual slides were presented to the pathologists.

- One set of virtual slides was directly transferred from scanner on the server and visualized with free available MIRAX VIEWER.

- Second set of virtual slides was converted from Mirax in JP2000 format, lossless compressed 1:30 ratio into ECW format and posted on WebMicroscope server. These digitized slides were visualized with a standard Web browser.

Original glass slides and original diagnoses were used as gold standard. Diagnoses and evaluation of image quality and validity of digitized slides were made by experienced and certified pathologists using an ordinary desktop computer. Pathologists were asked to complete formalized forms. Diagnosis accuracy, intraobserver agreement and interobserver coefficients were calculated using standard statistical test.

Results/Conclusion: High overall diagnosis accuracy and high overall score of image quality and satisfaction made digital slide technology ready for the forthcoming screening activity.