



Towards the fully digitalized surgical pathological laboratory: integration of digital microscopy diagnostics, textual reporting and remote consultation using digital networks

Péter Gombás¹, Béla Molnár², András Huszár³

1 State Health Centre, Division of Pathology, Budapest, Hungary

2 2nd Dept. of Int.Med., Semmelweis University, Budapest, Hungary.

3 Department of Forensic Medicine, University of Pécs, Hungary.

pgombas@pannonmail.hu

Abstract

Background: Important evolution in surgical pathology diagnostics can be observed in more consecutive steps regarding the routine workflow. Increase of information contain in reporting is a composite process. Both the textual data contents' requirement and graphical storage-and-transfer practice is anticipated in the fully digital pathology laboratory practice. The aim of the study is to evaluate this technology in a routine setting presenting existing example.

Methods: In the daily routine practice in a large hospital pathology department 80-120 new cases will be reported using 100-300 slides. Cases interesting by any aspect will be scanned and than upload on a digital slide server. During the diagnostic process 1.) sophisticated institutional database (with clinical data, other diagnostic modalities, pathology antecedents etc.), 2.) slide/smear archive and 3.) teleconsultation connection will be applied in one unit.

Results: Using integrated textual/graphical database speed, accuracy, actuality and prognostic power of reporting will be increased. The virtual microscopy analysis provides objective measurement data incorporated in the reports. Outside observers may perform an external quality control by routine consultation as well. Hospital information system enables precise case history analyses, impossible using non-digital networking tool previously. Both teaching subdivisions and decision making boards gains constant and indexed case databases of all required information as well.

Conclusions: The digital histology laboratory technology will convert traditional workflow in the next period. Realization depends not only on technical development but also on more complex planning of human organization, on details of way of changes and optimal use of existing divisional resources.