In this issue

Fred T. Bosman

© Springer-Verlag Berlin Heidelberg 2015

What do we have on the menu this month?

Two of the highlighted papers focus on intra-operative diagnosis. Matthaei et al. [1] report on the occurrence of biliary tract intraepithelial neoplasia (BilIN) in the resection margins of biliary tract cancer resection specimens. The group found BilIN, mostly low grade, in the margin of over half of the specimens. BilIN was most frequent in resection specimens of extrahepatic cholangiocarcinoma and when the primary tumor was large and had lymphovascular and perineural invasion. Not surprisingly, patients with a resection margin positive for invasive cancer had a significantly shorter overall survival than those with a clean resection margin, but the presence of BilIN did not affect survival. The take-home message of the paper is that those of us regularly confronted with frozen sections of resection margins of biliary tract cancer specimens should be prepared to find BilIN, but this diagnosis should not make the surgeon perform additional resection.

Hao et al. [2] describe their experience with an intra-operative reverse transcription (RT) PCR method to detect breast cancer cells in sentinel lymph node specimens of breast cancer. A one-step nucleic acid amplification (OSNA) assay, that uses loop-mediated isothermal amplification (LAMP) to detect the presence of cytokeratin 19 (CK19) transcripts, had gained some credibility in terms of sensitivity of detection relative to histological examination and as breast lymph node (BLN) assay even FDA approval. The study reports improvements in terms of reliability, specificity, and speed. Its results

were highly concordant with those of the BLN assay, but the new test required significantly less time. Studies in large series of patients should clarify if this approach might make it into the realm of standard practice.

The two other highlighted papers focus on molecular changes that might shed new light on molecular evolution of breast and bone cancer. Besic et al. [3] have used “good old” DNA flow cytometry to study potential differences in clonal characteristics between male and female breast cancer. Overall, almost 80 % of the breast cancers were aneuploid, with hypotetraploidy, tetraploidy, and hypertetraploidy in decreasing order of frequency. Surprisingly, male breast cancer was significantly more often hypertetraploid than female breast cancer. This leads the authors to hypothesize that the cytogenetic pathway of evolution might be different between male and female breast cancer. As flow cytometry screens the genome at a very superficial level, detailed molecular analysis would be necessary in order to substantiate this idea.

Amary et al. [4] studied the role of mutations of IDH1 (cytosolic NADP-dependent isocitrate dehydrogenase) and loss of function of p16/CDKN2A in tumor progression in chondrosarcoma. The study shows that IDH1 mutations occur early in chondrosarcoma development, as when found, they occurred in the primary as well as in local recurrences and metastases. Copy number variation of p16/CDKN2A occurred in 75 % of high grade central chondrosarcomas but not in low grade cartilaginous tumors and independently from mutation status.

The front page image is taken from the latter paper and illustrates an IDH1 mutation by Sanger sequencing in the upper panel and copy number loss of p16/CDKN2A by FISH in the lower.

F. T. Bosman (✉)
Institute of Pathology, University Medical Center (CHUV)
of Lausanne, Lausanne, Switzerland
e-mail: Fred.Bosman@chuv.ch

References

1. Matthaei H, Lingohr P, Strässer A, Dietrich D, Rostamzadeh B, Glees S, Roering M, Möhring P, Scheerbaum M, Stoffels B, Kalff JC, Schäfer N, Kristiansen G (2015) Biliary intraepithelial neoplasia (BillIN) is frequently found in surgical margins of biliary tract cancer resection specimens but has no clinical implications. *Virchows Arch*. doi:10.1007/s00428-014-1689-0
2. Hao X, Liu Y, Li X, Kang H, Qu X, He J, Hu H, Huang Y, Liu B, Yu C (2015) An intra-operative RT-LAMP method allows rapid and reliable detection of sentinel lymph node metastasis in breast cancer patients. *Virchows Arch*. doi:10.1007/s00428-014-1693-4
3. Bezić J, Šamija Projić I, Projić P, Ljubković J, Zekić Tomaš S, Meljanac Salopek K, Piljić Burazer M, Tomić S (2015) Flow cytometric DNA hypertetraploidy tends to be more frequent in male than in female breast cancers. *Virchows Arch*. doi:10.1007/s00428-014-1694-3
4. Amary MF, Ye H, Forbes G, Damato S, Maggiani F, Pollock R, Tirabosco R, Flanagan AM (2015) *Isocitrate dehydrogenase 1* mutations (*IDH1*) and *p16/CDKN2A* copy number change in conventional chondrosarcomas. *Virchows Arch*. doi:10.1007/s00428-014-1685-4