PostScript

CORRESPONDENCE

Intraoperative diagnosis using the frozen section technique

Rapid frozen section biopsies remain a common perioperative process, although accuracy rates are rarely considered. When error rates (or accuracy rates) are published, they generally include the reporting of general surgical specimens, where only the final report including paraffin wax embedded sections is taken into account. Although some pathologies are not suited to frozen section, the ability to confirm a tissue, extent of disease, pathological process, or resection margins remains vital to surgical practice.[1 2]

As with any diagnostic tool, there are specific limitations that allow errors to occur. These include the initial selection of tissue by the surgeon, the sampling of the tissue by the pathologist, the technical expertise required to prepare the slides,[3] errors in interpretation, and delivery of the result back to the surgeon. Published accuracy rates range between 84.8% and 98.34%,[4] with no recent assessment to our knowledge.

Over an 18 month period, 240 cases were analysed by five consultant histopathologists. Review showed absolute accuracy in terms of frozen section diagnosis and paraffin wax section validation for most, with only three inaccuracies.

- Sampling error in one case: the frozen section biopsy was negative, but tumour was found in the paraffin wax embedded section.
- Incorrect histological interpretation of tissue in two cases: (a) carcinoid diagnosed, actually melanoma; (b) fragmentary biopsy with carcinoma missed within profound inflammatory reaction. Neither of these results altered the intraoperative management and the paraffin wax embedded sections subsequently permitted appropriate therapeutic options.

There were also three cases with correct diagnosis of the tumour, although the paraffin wax embedded sections permitted reclassification of the tumour subtype (for example, squamous *v* adenocarcinoma).

A zero error rate is not realistic,[5] given the limitations of surgical biopsy, pathologist sampling, and the technique itself. The above series contained only three cases with important diagnostic errors, indicating an accuracy of 98.7%. This appears to support surgeons' expectations and to validate histopathology diagnosis within this arena. Participation in clinical audit and multidisciplinary team meetings clearly underpins this type of diagnostic intervention. Despite the ''low tech'' aspect of this investigation, it clearly remains a valuable tool during operative procedures.[6 7]

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References

1 **Garrett KL**, McNeal JE, Cohen RJ. Intraoperative lymph node staging of prostate cancer: the case against. *ANZ J Surgery* 2003;**73**:263–6.
2 **Hung W-KI**, Chan MCM, Chong SF, *et al*. Sentinel node biopsy in breast cancer: report of 50 cases using combined isotope and blue dye mapping. *Annals of the College of Surgeons of Hong Kong* 2002;**6**:53–7.
3 **Bancroft JD**, Gamble M. *Theory and practice of histological techniques*. 5th edn. Edinburgh: Churchill Livingstone, 2002.
4 **Loo KT**. Audit of frozen sections on brain and spinal cord lesions in Tuen Mun Hospital 1992–1999. *Annals of the College of Surgeons of Hong Kong* 2001;**5**:A5.
5 **Du Boulay C**. Error trapping and error avoidance in histopathology. In: *Recent advances in histopathology*, 20th edn. London: Royal Society of Medicine Press Ltd, 2003:103–13.
6 **Underwood JCE**. *Introduction to biopsy interpretation and surgical pathology*, 2nd ed. Berlin: Springer-Verlag, 1987.
7 **Silva EG**, Balfour Kraemer B. Tissue processing and microtomy including frozen. In: *Intraoperative pathologic diagnosis. Frozen section and other techniques*. Baltimore: Williams and Wilkins, 1987:85–107.

BOOK REVIEW

Practical dermatopathology (textbook with CD-ROM)

Edited by R P Rapini. Book and CD-ROM edition: Published by C V Mosby, 2005, $129.00 (hardback), pp 416. ISBN 0323011985

This book, written by an eminent author (Dr Ronald P Rapini from the University of Texas Medical School and MD Anderson Cancer Centre), is very useful for both pathology and dermatology residents as well as general pathologists. It is particularly useful at the side of the bench.

It has over 700 coloured pictures and extensive cross referencing across the book. In addition, the first chapter (Clinical and pathologic findings with differential diagnostic lists) is very helpful in reaching a diagnosis, especially with the wide range of differential diagnoses encountered in the field of dermatopathology. The accompanying CD-ROM contains the book's images for convenient use in PowerPoint presentations.

Its listed price of US$129.00 is quite appropriate and affordable by almost everyone. However, in order to keep the small size, the book lacks on details and it is certainly not for use as a reference book by dermatopathologists.

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CALENDAR OF EVENTS

Diagnostic Histopathology of Breast Disease

8–12 May 2006**,** Hammersmith Hospital and Imperial College, London, UK.

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