

Book Review

Review of “digital pathology” by Yves Sucaet and Wim Waelput

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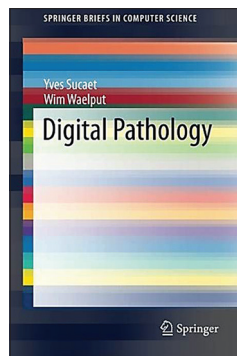
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Sucaet Y, Waelput W.
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New York: Springer; 2015
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In some ways, the term “Digital Pathology” is unfortunate. The implication is that the use of digital technology has only recently been introduced into the practice of pathology, when in fact pathology (both anatomic and clinical) was among the first medical specialties to incorporate the routine use of computers into daily practice. As it is most commonly used today, however, the term “Digital Pathology” refers specifically to the practice of anatomic pathology in which a pathologist does not actually look through a microscope. That is the subject of this book.

This relatively brief text provides a nice introduction and overview of the technology, history, and uses of telepathology as enabled by whole slide imaging. Intended for novices to the field, its six chapters cover the history, hardware/software, common applications, role in image analysis, use case examples, and predictions about the near horizon. For those new to the field, this is an easy read and a good way to come up to speed with general information about the technology and how it is being used.

This is a short book, however, and as such is fraught with the standard inaccuracies resulting from a simplified discussion of what, in practice, are actually complex subjects. For example, in comparing telepathology to the current practice of mailing slides for consultation, the cost of shipping slides combined with the professional costs of the consults is compared to the cost of only the digital pathology hardware, implying that no people are needed to run that hardware, that digital consults will somehow be done for free, and ignoring all the logistical complexities of electronic consultations.

The book also drifts a little far into the “hype” of digital pathology, compromising its potential as an objective assessment of the state of the field. This technology is proposed as the answer to many chronic problems, without consideration for the realities of pathology practice. For example, the authors state that digital pathology makes possible “expert pathological reviews from multiple experts simultaneously,” proposing this as a solution to both international health-care and routine quality assurance (QA). I’m not sure how many expert

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pathologists are lining up to provide uncompensated QA reviews of our routine in-house material.

Two particular cited examples of the benefits of digital pathology need some reality checks. One of the use cases cited is the use of this technology to provide 700 women in Haiti with life-saving diagnoses by pathologists in the US and Canada “who never left their own offices”. Parenthetically, the authors do point out that in reality, tissue was sent from Haiti to Seattle where it was processed, made into slides, and then scanned for digital distribution to pathologists. The second was repeated statements of the remarkable concordance rate of about 95% between digital and traditional diagnoses. Considering a pathology department that makes over 200 diagnoses a day, that would be 10 clinically significant errors each day. Does anyone consider that acceptable? The authors suggest that the rate of misdiagnosis by

traditional microscopy is also 5%, and base this on “a host” of studies, none cited, which have shown second opinion major discrepancies ranging from 1.3% to 30%! However, the only study they actually cite is one based on tertiary referral cases, which showed a discrepancy rate of 0.6%.

Finally, the book is, also not without some “commercial” bias of the authors. The book begins (preface) and ends (about the authors) with advertisements for the author’s new software product, and one of the case studies in chapter 5 contains a full-page promotion of a company with which the authors have an association.

In summary, I found the book easy to read and understand, and it does a nice job of introducing a novice to “digital pathology.” It does not cover any new ground, so is not likely to be of much interest to experienced pathology informaticists.