The science of cytopathology is at the threshold of a renaissance. For many years cytology has been superseded by needle core biopsy sampling for a variety of anatomical sites. More recently, however, there have been significant advances in image-guided sampling of deep seated organs, on the one hand, particularly through endoscopy and endoscopic ultrasound, and molecular techniques, on the other hand. Molecular changes are now required as an adjunct to morphology for a variety of tumors, not only for precise diagnosis but more importantly for targeted therapy. The combination of cytology, providing confirmation of viable tumor tissue sampling as well as a morphological diagnosis, either with or without the use of a cell block, with molecular testing is likely to take on a significant role as this has the advantages of speed, safety, accuracy, and minimal intervention.

Cytopathology is an art as much as a science. It is undoubtedly more challenging than histopathology. In addition to a thorough knowledge of histopathology, cytology requires patience, attention to detail, and keen observation of each and every parameter available, as well as the ability to correlate with the clinical context. Acquiring confidence in the practice of cytology requires years of hard work. The returns, however, are hugely rewarding, as a diagnosis can be given within minutes of taking the sample and through a minimally invasive procedure.

Cytology forms a major component of most pathology training programmes worldwide. It is common for trainees in pathology to find cytology daunting and difficult. It is also common for many practicing pathologists to report cytology as one of their specialties rather than a sole specialization, and there is a need to keep up to date with new terminology and recent advances. This book is intended to be an introduction to cytology, a brief update and, above all, a common sense and everyday bench top guide. It seeks to inform the reader about the scope and limitations of a cytological diagnosis in current clinical practice, and to indicate the expectations from and management implications of a cytological diagnosis in a given clinical context and at different body sites.

The book is not intended to be an atlas, and the authors readily acknowledge the far more comprehensive texts available for the purpose of illustrating a wide range of cytological lesions. Only common lesions likely to be encountered in a routine laboratory are illustrated. Similarly this text is not intended to provide an exhaustive bibliography and we have intentionally avoided filling the text with numerous references. In today’s world it is easy to search the Internet for any specific topic and we have aimed to provide a useful summary based on our own experiences and the essence of the published experiences of others. Each chapter is followed by a brief list of suggested reading material to direct the reader to more detailed and specific texts as necessary.

More than anything this book is written in the hope that those new to cytology will see its mysterious and magical attractions, principally through the unmatched thrill of making a diagnosis based on the appearances of relatively few cells, and that the text will help to dispel the fears traditionally linked with this fascinating field, by reassuring the reader about what is reasonably expected from a cytologist and what is beyond expectation.

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