

A Case-Based Guide to Clinical Endocrinology

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Cover illustration: Figure 1, Chapter 19, "Management and Investigation of Acute Hypercalcemia," by Suresh Vaikkakara, Chankramath S. Arun, and R. Andrew James. Figure b, Chapter 48, "Early Puberty and Hyperthyroidism," by Liuska Pesce and Donald Zimmerman. Figure 1, Chapter 49, "Hypothalamic Hamartoma," by Liuska Pesce and Donald Zimmerman.

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Preface

In December 2005 I changed my mind [1]. Up until that time I had put my name on one case history in 400 publications [2]. I changed my mind and realized that reading case histories could be a good learning exercise.

I had previously considered useful case histories to be essentially live case demonstrations. Indeed, I had persuaded years of endocrine clinical fellows that writing case histories was not something to be encouraged. But the cheese moved. Live case history presentations became too complex for easy digestibility. The many investigations and vast literature review required more contemplation than a live presentation had required in the past. And writing these exercises as a formal case history allowed the complex literature to be better understood. Furthermore, as our evidence base has grown, the idiosyncratic approach so common in live case demonstrations of the past has become totally unacceptable.

The written or prepared case has become the ideal forum for demonstrating how to manage a medical case to the greatest benefit of the patient. Indeed, written case histories are clearly the very best means of showing medical care guidelines in real practice and of revealing their advantages and disadvantages [3]. That does not mean we should no longer give live case demonstrations. Demonstrating a supportive and knowledgeable patient can be a magnificent teaching tool. For many years I have presented endocrinology cases to our first-year medical students, and for many years these physicians later told me how much they enjoyed them and that they remember them well. So clearly, both formats of delivery remain effective. The use of live cases demonstrates how to talk with a patient, demonstrates clinical signs, and often arouses enthusiasm for the subject. Written cases provide a more thoughtful review of modern management and contemplation of the literature much more so than even a case presentation without the patient—something I still dislike.

But written cases also serve as an important early learning tool, and this book is designed to serve this latter purpose. The authors have done a marvelous job of stimulating our interest in a wide variety of endocrine subjects while teaching us the modern management of the conditions described and providing us entry into the literature. We have tried as much as possible to cover most of the current curriculum for clinical endocrine training as recommended by the Association of Program Directors in Clinical Endocrinology, Diabetes and Metabolism (APDEM, <http://www.apdem.org/>). To help readers determine if they have been concentrating,

each author provides multiple-choice questions that will test what readers have retained. Indeed, readers experienced in endocrinology may want to try the questions first! But students, residents, and fellows will find the examples to be an efficient way of reviewing their knowledge and increasing their experience in case management.

The cases as a whole have made a gem of a collection, and I thank all the contributors for their hard work and their willingness to keep to the outline constraints imposed by such a book in order to retain some cohesiveness. Thanks also to our publishers, especially Richard Lansing of Humana Press, for his patience and support, and to P. Michael Conn, for pushing me into the project. Oh, and by the way, changing one's mind is OK.

Terry F. Davies, MD, FRCP, FACE

References

1. Davies TF. When the facts change, I change my mind—Do you? *Thyroid* 2006;15:1319.
2. Snow M, Davies TF, Smith BR, et al. Thyroid-stimulating antibodies and metastatic carcinoma of the thyroid. *Clin Endocrinol* 1979;10:413–418.
3. Davies TF. Is consensus a good thing in the management of thyroid nodules? *Thyroid* 2006;16:205.

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