INTEGRATED GYNECOLOGY

Principles and Practice

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Preface

This book is a culmination of a project dating back many years when the authors first met in Vienna as postgraduate medical students interested in gynecologic pathology and research. There began an exchange of views followed by frequent discussions of clinical and research problems. From these encounters first emerged the authors' resolution to communicate the results of their studies in a joint publication. With increasing experience gained later as teachers, heads of hospital services, and in active practice, the scope of the authors' project broadened into the present textbook, *Integrated Gynecology*. In retrospect it now appears to be a natural development from an early introduction into the medical discipline, which seeks to correlate gynecology with other branches of medicine.

Justification is needed for adding a new textbook of gynecology to the excellent American and English textbooks that are already available. It was the purpose of the authors to present their own views and experiences in this book and to emphasize that exclusive restriction to a particular branch of medicine is no longer in keeping with the times. This broader concept is manifested by the present tendency of specialists to widen their contact with general medicine rather than confine their interest to a limited region of the body. They are increasingly more inclined to follow progress in other fields of medical science and no longer depend entirely upon the knowledge gained as students. Specialization, in the best modern sense of the term, means steeping oneself in a particular field of medical knowledge while being ever alert to all noteworthy facts established in other

branches of medicine. In this sense present-day gynecology is not merely a science concerned with diseases of the female sex organs; it is the science of woman in health and disease.

For this reason the authors have included in the book a chapter on reciprocal relations between gynecology and other branches of medicine. This chapter does not pretend to exhaust the vast amount of material on interorganic relationships. It deals essentially with the problems that are of interest to the gynecologist as well as the general practitioner. The relationship between the urinary organs and the female sex organs has received more than cursory attention because it involves intimate anatomic, embryologic, and physiologic connections; similarly, the breasts, owing to their peculiar role in reproduction and their close relation to the endocrine system, have been quite extensively discussed.

The chapter on evolution has been treated in greater than customary details because many important anomalies and tumor formations can be traced to embryologic deviations; hence without adequate ontogenetic reference, these pathologic conditions would be incomprehensible. It is realized that at best this highly specialized aspect of gynecology requires extraordinary concentration for one to be able to visualize the development of organ structures and their deviations.

Acknowledgment of the achievements of the pioneers in gynecology stems from a sense of obligation to our predecessors. It also serves to preserve the sense of historic continuity in our specialty and inspires confidence in its future progress. Reference to the names and achievements of older authors may counteract the increasingly noticeable trend of quoting only from the most recent literature. It affords the younger generation the opportunity of becoming familiar with the names and contributions of their predecessors who, as founders of gynecology, developed many ideas now frequently lost sight of and therefore inadvertently credited to later authors. The literature herein presented comprises the progress in gynecology and related fields covering a period of over seventy-five years. The notable contributions of American and foreign authors have been included in their appropriate connections.

Some pages of this book contain text matter that would seem to belong to general medicine and physiology. We believe that their pertinence to gynecologic pathology fully warrants their inclusion.

The book was primarily designed for use by medical students and general practitioners. But since it includes the personal experiences

and points of view of the authors, it is hoped that it will also prove of interest to the specialist. The authors hope that their effort will merit the approval of their colleagues and will deeply appreciate constructive criticism and correction.

In the matter of illustrations, we should have been at a great loss were it not for the kindness of Dr. Paul Klemperer, Director of the Department of Pathology, Mount Sinai Hospital, New York, who placed the entire collection of specimens of his laboratory at our disposal. Many other colleagues have helped us by contributing slides, photographs, and drawings. Their names are gratefully mentioned in the corresponding figure legends. To all of them we express our best thanks. The authors also acknowledge the valuable assistance of Dr. Bruno R. Kriss, who did a yeoman's job in collating the Bibliography and the arrangement of the manuscript. And to Prof. William Dietz we owe thanks for his beautiful drawings.

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Introduction

Anatomy, evolution, and physiology of the female sex organs represent the triad which forms the basis of gynecology in general and with which every gynecologist should familiarize himself. From the anatomic point of view the female sex organs should not be regarded as static but rather in a state of continuous change. They are not only different in periods of inactivity, i.e., before maturity and after menopause, but constantly vary during the period of maturity and sexual activity, changing their structure during each menstrual cycle. For this reason the chapter on anatomy (Chapter 2) was not limited to the description of the anatomical conditions in the adult mature woman. It includes not only the description of the conditions in childhood and in postmenopausal involution but also the changes which the sex organs undergo during each menstrual cycle.

Cadaver anatomy is inadequate today. Study of the shape and position of the female sex organs in the healthy living female and their topical relationship to the other pelvic organs and structures has shown that the old concepts of cadaver anatomy differ widely from those of the living organism. The tone of the abdominal and pelvic muscles, the turgor of the living tissues, and the influence of intraabdominal pressure and of varying postures have an important bearing on the anatomy of the female sex organs.

Newer methods of research have contributed to modern concepts of functional anatomy. Investigations of the fat, glycogen, and phosphatase content of cervical, endometrial, and tubal epithelia, the study of such minute structures as mitochondria by the electron micro-

scope, and the study of living cells by the phase contrast microscope have opened new fields of research in gynecologic structural anatomy.

The anatomy of the female sex organs would be incomplete if it did not include the anatomical relations of these organs to the other pelvic structures, particularly to the bladder and the ureters. Gynecologic surgery requires thorough knowledge of these organs under normal and pathologic conditions.

Chapter 3 of this book deals with the evolution and involution of the female genitourinary organs. The traditional limitation of this chapter to the description of the intrauterine development of these organs has been discarded. Instead it has been revised in conformity with the interpretation that the evolution of the sex organs does not stop with birth but continues until maturity, reaching its peak in pregnancy. The involution of the sex organs which succeeds the phase of maturity is also included in this chapter. Although antedating the involution of the other abdominal organs, involution of the sex organs cannot be said to be a sign of senility. It represents but a phase of sexual rest which relieves the woman from the burden and dangers of reproduction while enabling her to fulfill other important tasks.

The fourth chapter of Volume I, which deals with the physiology of the female sex organs, has not been limited to a mere account of the present stage of our knowledge which undoubtedly will change from time to time. The desire of the authors has been to acquaint the reader with the gradual development of our knowledge of the function of the female reproductive organs. Beginning with observations obtained by simple experiments such as elimination of gonadal function by castration and its restitution or modification by implantation of homologous and heterologous gonads, they were later amplified by clinical observation and analysis of analogous conditions in man. Thorough histologic investigations of the endometrium, the corpus luteum and atreticum, vaginal smears, and correlation of these investigations with clinical observations, have marked the next steps in the successful exploration of the functions of the female sex organs. They were followed by the successful isolation and chemical analysis of the responsible hormonal agents which determine the functional and structural changes of the sex organs. Much knowledge has been accumulated about the sex hormones and related hormones but many questions still await a definite answer; e.g., the chemical structure of the many anterior pituitary hormones and the identification of their origin from the different cells of the anterior pituitary

lobe are still unknown. Another moot point is whether the adrenal cortex really produces the large number of hormones which have been isolated from the cortex or whether it secretes only one or a few basic hormonal substances which, under the influence of changing conditions, are readily converted into various derivatives with different hormonal activities.

Limited space does not permit inclusion in this chapter of the very interesting data on comparative sex physiology. Only a few facts have been mentioned which add to and elucidate the experiences in man.

It is logical to begin the clinical part of the book with a chapter on examination. Whereas the gynecological examination was formerly limited to history-taking and to inspecting and palpating the female sex organs, many new techniques and procedures have been devised which make the diagnosis easier and more exact. Bacteriological, serological, and chemical examinations, animal essays, hysterosalpingography, uterotubal insufflation, colposcopy, cytology, culdoscopy, pneumoperitoneum, and diaphanoscopy have been added to the erstwhile simple clinical examination, and the number of new essays and technical procedures is still increasing.

Developmental anomalies of the sex organs, often combined with anomalies of the closely related urinary system, are discussed in Chapter 6. Especially noted are frequent minor deviations from the norm such as hypoplasia and infantilism, which do not seriously affect the well-being of the individual but nevertheless gravely impair her reproductive ability and impose difficult therapeutic problems. However, even severe malformations such as aplasias, failures in the union and canalization of the Müllerian ducts, and congenital displacements of the uterus and the ovaries are by no means rare and present serious diagnostic and therapeutic problems.

The prognosis of congenital anomalies of the genitourinary organs is not entirely hopeless. Many malformations can be corrected by surgical procedures so that some or even all normal sexual functions can be restored. The steadily deepening insight into the causation of developmental anomalies has led to the recognition that not all developmental aberrations are the consequence of a faulty chromosomal anlage, which would stamp them as hereditary, irretrievable, and unavoidable. Newer observations have shown that some anomalies can be traced to intrauterine injuries such as infections and intoxications which can be avoided by adequate hygiene during pregnancy. The astonishing achievements of experimental teratology

with artificial production of congenital anomalies, though fascinating, do not as yet give any clue to the prevention of such malformations.

Injuries of the female genital organs by physical and chemical noxious agents are frequent. Increasing exposure of women to the hazards of sport, traffic, and factory work has caused a steady increase in accidental injuries of the sex organs. The majority can be prevented by hygienic measures. Injuries caused by improper conduct of labor or abortion are still frequent but fortunately are becoming less. Chapters 7 and 8 give a brief review of the manifold mechanical and chemical injuries which may seriously alter the anatomical and functional state of the female sex organs.

Nevertheless, childbirth injuries are still the main causes of displacements of the sex organs which require surgical correction. The diagnosis of these and other displacements, with which Chapter 9 deals, is usually very simple but their adequate treatment requires great experience and surgical skill. Many procedures have been developed in order to correct the functional troubles caused by the various displacements. However, only such methods are fully satisfactory to the patient and to the physician which avoid mutilation and completely restore normal conditions. The technique of the different surgical procedures has been described in Chapter 3, Volume III.

A thorough change has taken place in the course of the last half century in the evaluation of the clinical importance of some displacements and form anomalies of the sex organs. Retroflexion, retroversion, and hyperanteflexion, formerly regarded as serious conditions and as the source of numerous complaints, have lost much of their clinical importance. They are considered today by most gynecologists as negligible deviations from the norm. In the opinion of the present authors the pendulum has swung too far in the opposite direction and a middle course is probably the one to be adopted.

Infectious diseases of the female sex organs (Chapter 10) formerly regarded as a scourge of adult women have in the last two decades fortunately lost most of their dread. Modern chemotherapy has revolutionized the prevention and treatment of inflammatory diseases. Gonorrhea, which formerly made many women sterile, and syphilis, which prevented others from bearing healthy children, are rare nowadays. These venereal diseases can be cured within a short time before they cause irreparable damage to the affected individual and are possibly transmitted to other individuals. The most impres-