



E601  
1

8202010  
外文书店

# INTEGRATED GYNECOLOGY

## *Principles and Practice*

I. C. RUBIN, M.D.

*Formerly Clinical Professor of Gynecology, College  
of Physicians and Surgeons, Columbia University,  
and Formerly Clinical Professor of Obstetrics and  
Gynecology, New York University*

JOSEF NOVAK, M.D.

*Professor of Obstetrics and Gynecology, University  
of Vienna, and Formerly Clinical Professor of  
Gynecology, College of Physicians and Surgeons,  
Columbia University*

Volume I

THE BLAKISTON DIVISION

McGraw-Hill Book Company, Inc.

NEW YORK TORONTO LONDON

1956

60



INTEGRATED GYNECOLOGY

Copyright © 1956, by the McGraw-Hill Book Company, Inc.  
All rights reserved. This book, or parts thereof, may not be  
reproduced in any form without permission of the publishers.

*Printed in the United States of America*

Library of Congress Catalog Card Number: 56-6120

INTEGRATED  
GYNECOLOGY

## 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.

For permission to reproduce illustrations of previously published books and articles, the authors are greatly indebted to the following publishers: Johann Ambrosius Barth Verlag, The Blakiston Co., Inc., J. F. Bergmann, Carnegie Institution (Washington, D.C.), The Commonwealth Fund, Gustav Fischer Verlagsbuchhandlung, S. Karger, J. B. Lippincott Co., The C. V. Mosby Co., W. B. Saunders Co., Springer-Verlag OHG, Georg Thieme Verlag, Urban & Schwarzenberg, The Viking Press, Inc., The Williams & Wilkins Co., Year Book Publishers, Inc., and the Journal of the American Medical Association. We wish furthermore to express our indebtedness to the firms of Ciba Pharmaceutical Products, Inc., The Radium Emanation Corp., J. Sklar Manufacturing Co., American Cystoscope Makers, Inc. (A.C.M.I.), and C. R. Bard, Inc. for permission to reproduce some of their illustrations and for their generous offers of electrotypes.

It is a pleasant duty to express our acknowledgment to Mr. Barney V. Pisha. We are deeply appreciative of his untiring and arduous efforts to facilitate the publication of this book.

NEW YORK, NEW YORK

*I. C. Rubin*  
*Josef Novak*

### **NOTE ON CROSS-REFERENCE SYSTEM**

The volume in which a figure, chapter, or page occurs is indicated by a Roman-numeral volume number enclosed in brackets or parentheses following the reference. If the figure, chapter, or page appears in the same volume as the reference to it, no volume number is given.



# Contents

---

## VOLUME I

<i>Preface</i>	v
1. INTRODUCTION	1
2. ANATOMY	9
Female Reproductive Organs	9
<i>Ovary; Fallopian Tubes; Epoophoron (Parovarium); Paroophoron; Topography of the Ovaries and Tubes; Uterus; Vagina; External Genitalia; Blood Vessels of the Female Genitalia; Lymphatics and Lymph Nodes of the Female Genitalia; Nervous System of the Female Genitalia; Pelvic Peritoneum</i>	
Muscles and Fasciae of the Pelvic Walls	91
Female Urinary Organs	100
<i>Topography of the Female Urinary Organs</i>	
3. EVOLUTION AND INVOLUTION	114
Intrauterine Development of Urinary and Genital Organs	114
<i>Development of Urinary Organs; Development of Sex Organs; Development of the Bladder</i>	
Extrauterine Evolution and Involution of Female Genital Organs	148
4. PHYSIOLOGY	161
Introduction	161
Secondary Sex Characteristics	162
Sex Determination and Differentiation	168
Castration	170
<i>In Humans; Indications for Therapeutic Castration; Congenital Absence of Gonads; In Animals</i>	

Transplantation of Gonads	179
Sites of Hormone Production in Gonads	182
<i>In the Male; In the Female; Elimination of Single Gonadal Constituents</i>	
Implantation of Gonads into Castrated Animals	185
Effects of Ovarian Cycle	186
<i>In Humans; In Animals; The Regulatory Mechanism; Cause of Periodicity</i>	
Stages of Menstrual Cycle	194
<i>Ovulation; Premenstruum; Menstruation; Puberty; Climacteric</i>	
Endocrine Function of the Placenta	205
Hormones of the Sex Glands (Ovary, Placenta, Testicle, and Adrenal)	207
<i>History; Chemistry; Occurrence; Decomposition; Action</i>	
Gonadotropic Function of the Anterior Pituitary Lobe	223
<i>History and Action; Locations; Summary</i>	
Gonadotropic Activity of Prolactin	231
Antihormones	231
Role of the Hypothalamus in the Regulation of Gonadal Function	232
Motility within the Genital Tract	234
Sensibility of the Female Genital Organs	237
Erection and Ejaculation	239
 5. GYNECOLOGIC EXAMINATION	 272
History	272
Examination	274
<i>General Examination; Special Gynecologic Examinations (Position, Inspection, Palpation, Percussion, Auscultation, Pelvic examination, Uterotubal insufflation, Hysterosalpingography, Pneumoperitoneum, Vaginal peritoneoscopy, Exploratory laparotomy, Hysteroscopy, Diaphanoscopy, Biopsy, Vaginal and cervical smears, Pregnancy tests)</i>	
 6. CONGENITAL ANOMALIES OF THE GENITOURINARY ORGANS	 354
Developmental Anomalies of the Ovaries	355
Developmental Anomalies of the Müllerian Ducts	357
Symptomatology of Malformations of the Internal Sex Organs	363
Treatment of Malformations of the Internal Sex Organs	369
Developmental Anomalies of the Kidneys	371
Developmental Anomalies of the Renal Pelves and Ureters	376
Developmental Anomalies of the Cloacal Organs	377
Anomalies of Sex Determination (Hermaphroditism, Intersexuality, Gynandromorphism)	384
 7. INJURIES OF THE FEMALE SEX ORGANS	 401
Injuries Caused by Sexual Intercourse	401
Injuries Caused by Childbirth	405
Injuries Resulting from Artificial Abortion	409
Injuries Resulting from Accidents	410
Injuries from Caustic Agents, Electrocautery, and Irradiation	411
Injuries from Operations	413

8. EFFECT OF TOXIC AGENTS ON THE FEMALE GENITAL ORGANS	417
Abortifacients	419
Industrial Intoxications	423
Addiction Poisons	424
Improper Therapeutic Administration of Chemical Agents	426
Noxious Metabolites	427
9. DEFORMITIES AND DISPLACEMENTS OF THE INTERNAL GENITAL ORGANS	431
Normal Shape and Position	431
Normal Support and Suspension of the Internal Genital Organs	434
Pathologic Forms and Position of the Internal Genital Organs	437
10. INFLAMMATORY DISEASES OF THE FEMALE GENITALS	474
General Considerations	474
<i>Etiology of Inflammations; Defensive Forces of the Genitals against Infection; The Course of Inflammatory Diseases of the Genitals; Pathology and Symptomatology of Inflammatory Diseases; Treatment of Inflammatory Conditions of the Female Genitalia</i>	
Special Considerations	512
<i>Infections with Schizomycetes; Virus Diseases; Mycoses; Protozoan Diseases; Helminthiasis; Diseases of Female Genitalia Due to Arthropodes (Dermatozoonoses); Effect of General and Extragenital Infectious Diseases on the Female Genitalia</i>	
INDEX	1

## VOLUME II

1. TUMORS OF THE FEMALE SEX ORGANS	1
Introduction	1
Tumors of the Ovary	3
<i>General Considerations; Classification of Ovarian Tumors; Non-neoplastic Tumors of the Ovary; Neoplastic Tumors of the Ovary (Tumors derived from surface epithelium, Germinal-cord tumors, Mesenchymal tumors, Neurogenic tumors, Tumors derived from embryonal inclusions, Metastatic tumors of the ovary)</i>	
Tumors of Fallopian Tubes	93
<i>Non-neoplastic Tumors of the Tubes; Neoplastic Tumors of the Tubes (Benign epithelial tumors, Malignant epithelial tumors, Benign mesenchymal tumors, Malignant mesenchymal tumors, Mixed tumors of the tube)</i>	
Mesonephric Tumors	103
<i>Parovarian Tumors</i>	

Tumors of the Uterus	108
<i>Classification; Non-neoplastic Excessive Growth (Hyperplasia) of Uterine Tissues (Exophytic hyperplasia of the endometrium, Exophytic hyperplasia of the endocervix, Endophytic hyperplasia of the endometrium, Endophytic hyperplasia of the endocervix, Hyperplasia of the myometrium, Hyperplasia of the cervix); Neoplastic Tumors of the Uterus (Benign epithelial neoplasms, Malignant epithelial neoplasms, Benign desmoid neoplasms, Malignant desmoid neoplasms, Mixed tumors of uterus); Uterine Cysts</i>	
Tumors of the Vagina	244
<i>Classification (Benign epithelial tumors, Malignant epithelial tumors, Benign desmoid tumors, Malignant desmoid tumors, Mixed tumors)</i>	
Tumors of the Vulva	250
<i>Classification; Non-neoplastic Growths (Hypertrophy and hyperplasia, Retention cysts, Parasitic cysts, Cysts of unknown origin, Inflammatory growths of the vulva); Neoplasms of the Vulva (Benign epithelial neoplasms, Fibroepithelial tumors, Benign desmoid tumors, Precancerous lesions, Malignant epithelial neoplasms, Mixed neoplasms, Neoplasms of contested histogenesis)</i>	
Neoplasms Occurring in the Pelvic Connective Tissue	273
<i>Classification; General Considerations (Histologically benign neoplasms derived from common constituents of the pelvic connective tissue, Malignant neoplasms derived from common constituents of the pelvic connective tissue, Histologically benign neoplasms originating from embryonic rests and inclusions, Malignant neoplasms arising from embryonic rests, Secondary neoplasms of the pelvic connective tissue, Pseudotumors of the pelvic connective tissue)</i>	
Precancerous Lesions	280
2. CONSTITUTIONAL DISORDERS AND GYNECOLOGY	340
History	340
Definition of Constitution	341
Classification of Constitutional Types	342
Special Constitutional Pathology	343
<i>Infantilism; Asthenia; Obesity; Constitutional Thinness; Constitutional Anomalies of Hair Growth and Pigmentation; Growth Anomalies; Genital Tumors and Constitution</i>	
3. DISORDERS OF REPRODUCTION	366
Abortion	366
<i>Definition; Spontaneous Abortion; Artificial Abortion</i>	
Sterilization and Contraception	396
<i>Temporary Sterilization; Permanent Sterilization</i>	
Ectopic Pregnancy	406
<i>Definition and Classification; Common Characteristics; Etiology; Different Forms of Ectopic Pregnancy; Clinical Course; Diagnosis; Treatment</i>	
Sterility	429
<i>Definition and Types of Sterility; Physiologic Sterility in the Female; Factors Essential for Fertility (Quality of the gametes, Disturbance in passage of the gametes through the genital tract, Diseases of the uterus as causes of</i>	

*sterility, Lesions of the female organs of copulation and of their accessory structures, Lesions of the male organs of copulation and of their accessory structures, Functional disturbances that impair fertility); Diagnostic Procedure in Sterility; Prevention of Sterility; Treatment of Sterility*

## INDEX

1

## VOLUME III

1. RELATIONSHIP BETWEEN REPRODUCTIVE AND OTHER BODY SYSTEMS	1
General Considerations	1
Relationship between Eye and Female Sex Organs	5
Relationship between Ear and Female Sex Organs	9
Relationship between Nose and Female Sex Organs	10
Relationship between Pharynx and Female Sex Organs	13
Relationship between Larynx and Female Sex Organs	13
Relationship between Gastrointestinal Tract and Female Sex Organs	15
Relationship between Liver and Female Sex Organs	25
Relationship between Pancreas and Female Sex Organs	29
Relationship between Spleen and Female Sex Organs	34
Relationship between Skin and Female Sex Organs	35
Relationship between Nervous System and Female Sex Organs	48
Relationship between the Psyche and Female Sex Organs	62
Relationship between Psychoses and Female Genital Organs	87
Relationship between the Circulatory System, the Blood, and Female Genital Organs	93
Relationship between Lungs and Female Generative Organs	117
Relationship between the Muscular System and Female Genital Organs	124
Relationship between the Female Genitalia and Extragenital Endocrine Glands	125
<i>Hypophysis; Epiphysis; Thyroid; Parathyroids; Thymus; Adrenals</i>	
Relationship between Bones and Joints and Female Reproductive Organs	159
Relationship between the Breasts and Genital Organs	171
<i>Evolution of the Breast; Anatomy of the Mature Mammary Gland; Changes in the Breasts during Pregnancy and Puerperium; Changes in the Breasts at the Climacteric and in Senescence; Hormonal Influence upon Growth and Function of the Mammary Glands; Developmental Anomalies of the Breasts; Hormonal Disorders of the Breasts; Inflammatory Diseases of the Breasts; Neoplasms of the Breast</i>	
Relationship between the Urinary Organs and the Female Genital System	214
<i>Physiology of the Urinary Organs; History and Examination; Malformations of the Urinary Organs; Stenoses of the Urinary Tract; Widening of the Urinary Tract; Inflammatory Diseases of the Urinary Organs; Displacements of the Urinary Organs; Circulatory Disturbances within the Uri-</i>	

*nary Tract; Destructive Genitourinary Lesions; Foreign Bodies in the Female Urinary Tract; Tumors of the Urinary Tract; Functional Disorders of the Urinary Tract; Reciprocal Relations between the Urinary and Genital Organs*

2. GYNECOLOGIC SYMPTOMATOLOGY	362
Uterine Bleeding	362
<i>Characteristics of Uterine Bleeding; Physiologic Uterine Bleeding; Pathologic Uterine Bleeding; Control of Uterine Bleeding</i>	
Vicarious Menstruation	376
Oligomenorrhea and Amenorrhea	377
<i>Physiologic Amenorrhea; Pathologic Amenorrhea</i>	
Premenstrual Tension	379
Pain	380
<i>Dysmenorrhea; Intermenstrual Pain (Mittelschmerz); Shoulder Pain; Peritoneal Pain; Backache; Coccygodynia</i>	
Pruritus of the Vulva	395
Shock of Gynecologic Origin	398
Discharge (Fluor)	400
Sterility	404
3. OPERATIVE GYNECOLOGY	414
General Principles	414
<i>Prevention of Infection; Incision; Hemostasis; Suture Technique; Peritonealization; Drainage; Preparation for Operation; Anesthesia; Posture of Patient during Operation; Dressing and Aftertreatment; Prevention and Treatment of Postoperative Diseases of the Urinary Tract; Regulation of the Diet and the Bowels; Postoperative Complications</i>	
Abdominal Operations	465
<i>Exploratory Laparotomy; Salpingo-oophorectomy; Salpingectomy; Enucleation of Ovarian Cysts; Enucleation of Intraligamentary Cysts; Partial Resection of the Ovary; Ligation and Resection of the Tubes for Sterilization; Salpingostomy; Implantation of the Ovaries into the Uterus; Subtotal Hysterectomy; Total Hysterectomy with or without Resection of the Adnexa; Myomectomy; Abdominal Radical Operation for Cervical Carcinoma; Iliac Lymphadenectomy; Partial and Complete Pelvic Exenteration; Operations for Retroflexion of the Uterus; Cornual Resection for Recurrent Salpingo-oophoritis</i>	
Vaginal Operations	522
<i>Incision of a Bartholin Abscess; Extirpation of a Bartholin Cyst; Resection of Overstretched Labia Minora; Excision of the Hymen; Incision of the Hymen for Hymenal Atresia of the Vagina; Extirpation of Benign Tumors of the Vulva; Vulvectomy; Extirpation of Vaginal Cysts; Cervical Operations; Curettage; Digital Exploration of the Uterus; Anterior and Posterior Colpotomy—Douglas Puncture; Vaginal Hysterectomy; Vaginal Supravaginal Amputation of the Uterus; Removal of Pedunculated Submucous Myomas; Vaginal Radical Operation for Cervical Cancer; Operations for Prolapse; Repair of Complete Perineal Laceration; Repair of Rectovaginal Fistula; Operation for Inversion of the Uterus; Operations for Urinary</i>	

<i>Incontinence; Operations for Urinary Fistulas; Construction of an Artificial Vagina; Surgical Treatment of Urethral Caruncle; Operation for Urethral Diverticula; Operations on the Nervous System for Gynecologic Disorders</i>	615
Related Operative Procedures	615
4. PHYSIOTHERAPY	629
Radiotherapy	630
<i>Radium; Mesothorium, Actinium, and Radioactive Cobalt; Roentgen Rays; Indications for Radiotherapy; Grenz Rays; Light Therapy</i>	
Massage and Mechanotherapy	650
Thermotherapy	653
Hydrotherapy and Balneotherapy	659
Electrotherapy	662
5. FEMALE HYGIENE	669
INDEX	1

# 1

## 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