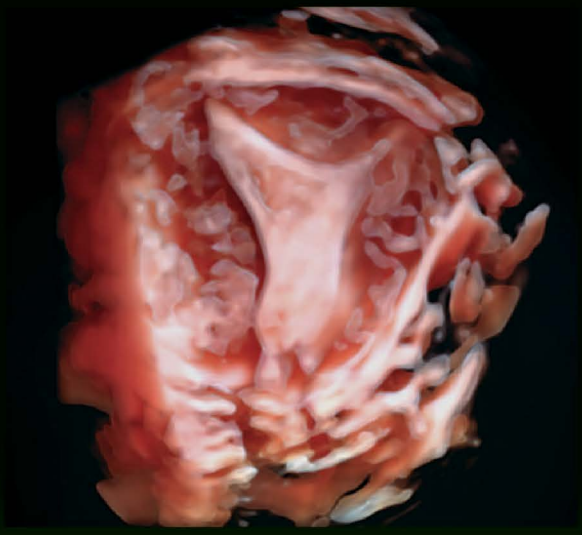
ics & gynecology books, visit our website www.jaypeebrothers.com, for detailed information on obstetrics & gynecology bo



Step by Step®

Step by Step® Ultrasound in Gynecology

Editor-in-Chief
Narendra Malhotra

Associate Editors
Nidhi Gupta
Neharika Malhotra
Jaideep Malhotra
Kuldeep Singh

3rd Edition

JAYPEE

Contents

1. Basics in Ultrasonography 1
2. Training 51
3. Introduction 55
4. Normal Anatomy of Female Pelvis 59
5. Pelvic Sonography 62
6. Normal Female Pelvis 69
7. Uterine Disorders 95
8. Ovarian Disorders 154
9. Miscellaneous Disorders 179
10. Ectopic Pregnancy 195
11. Trophoblastic Disease in First-trimester 210
12. Intrauterine Contraceptive Device 215
13. Vaginal Bleeding with Negative Pregnancy Test 221
14. Chronic Pelvic Pain 230
15. Common Gynecological Diseases 241

Index 301

CHAPTER

2 Training

The practice of ultrasound and the use of diagnostic and interventional ultrasound is like a stethoscope to the gynecologist today. It is impossible to even conceive a gynecology diagnostic unit without ultrasound.

AIMS OF THE TRAINING SCHEDULE

- Ability to visualize in two-dimensional image and a three-dimensional structure.
- Hand-eye coordination.
- Supervision is essential.
- Level of training depending on competence.

REQUIRED SKILLS

The trainee should be able to identify:

- Normal pelvic anatomy
- Uterine size and endometrial thickness
- Measurement of ovaries
- Pelvic tumors, e.g. fibroids, cysts hydrosalpinx
- Peritoneal fluid
- Intrauterine contraceptive devices.

THEORETICAL TRAINING PROGRAM

It helps the trainee to understand and be able to discuss the following.

JAYPEE BROTHERS

Basic Principles of Medical Ultrasound

- The relevant principles of acoustics, attenuation, absorption, reflection, speed to sound
- The effect on tissues of pulsed and continuous-wave ultrasound beams: biological effects, thermal and non-thermal
- Basic operating principles of medical instruments:
  - Pulse echo, scanning principles and 3D
  - Pulse echo instruments, including linear array, curvilinear, mechanical sector, transvaginal and rectal scanners
  - Velocity imaging and recording:
    - ⇒ Doppler principle
      - – Continuous wave
      - – Pulse wave
      - – Color flow mapping
      - – Power Doppler
    - ⇒ Color velocity imaging
    - ⇒ Pitfalls, artifacts
  - Data acquisition
  - Signal processing (may be given in practical demonstration):
    - ⇒ Gray scale
    - ⇒ Time gain compensation
    - ⇒ Dynamic range
    - ⇒ Dynamic focus
    - ⇒ Gain compensation, acoustic output relationship (may be given in practical demonstration)
  - Artefacts, interpretation and avoidance
    - ⇒ Reverberation
    - ⇒ Edge effects
    - ⇒ Shadowing
    - ⇒ Side lobes
    - ⇒ Registration
    - ⇒ Enhancement

JAYPEE BROTHERS

- Measuring systems
  - ⇒ Linear, circumference, area and volume
  - ⇒ Doppler ultrasound—flow, velocity spectrum analysis
- Imaging recording, storage and analysis
- Interpretation of acoustic output information and its clinical relevance.

GYNECOLOGICAL ULTRASOUND

- Normal pelvic anatomy
  - Uterus
    - ⇒ Uterine size, position, shape and movement
    - ⇒ Cyclical morphological changes in the endometrium
    - ⇒ Measurement of endometrial thickness
  - Ovaries
    - ⇒ Size, position, shape and measurement
    - ⇒ Cyclical morphological changes
    - ⇒ Measurement of follicles and corpus luteum
    - ⇒ Assessment of peritoneal fluid.
- Gynecological complications
  - Uterus
    - ⇒ Fibroids ⇒ Adenomyosis
    - ⇒ Endometrial hyperplasia
    - ⇒ Endometrial cancer ⇒ Polyps
    - ⇒ Location of intrauterine contraceptive device.
  - Tubes
    - ⇒ Hydrosalpinx and other abnormalities of the fallopian tubes.
  - Ovaries
    - ⇒ Cysts; benign and malignant, morphological scoring systems

JAYPEE BROTHERS

⇒ Endometriosis
⇒ Ovarian carcinoma
⇒ Differential diagnosis of pelvic masses

- Infertility
  - Monitoring of follicular development in spontaneous and stimulated cycles
    ⇒ Diagnosis of hyperstimulation syndrome
    ⇒ Diagnosis of polycystic ovaries
    ⇒ Sonosalpingography
- Invasive procedures
  - Oocyte retrieval
  - Injection of ovarian cysts
  - Aspiration of ovarian cysts
  - Drainage of pelvic abscesses
  - Extraction of intrauterine contraceptive device
- Doppler in gynecology
  - Infertility and oncology.

PRACTICAL TRAINING

Requirement Skills

- The trainee should be able to identify gynecological problems by transvaginal and transabdominal ultrasound.
- Normal pelvic anatomy
- Uterine size and endometrial thickness
- Measurement of ovaries
- Pelvic tumors, e.g. fibroids, cysts, hydrosalpinx
- Peritoneal fluid
- Intrauterine contraceptive devices.

JAYPEE BROTHERS

for detailed information on obstetrics & gynecology books, visit our website www.jaypeebrothers.com, for detailed informa

Step by Step®
Ultrasound in Gynecology

Salient Features

- After the overwhelming response to the first two editions of this book, the authors have come out with the third edition
- Ultrasound today is the most accepted investigation and diagnostic modality for evaluation of any disease in the human body. It is like a stethoscope to the gynecologist and is today a must modality to be learnt and practiced by all gynecologists.

Narendra Malhotra is a great academician and medical teacher of this field and has given many practical tips for these procedures. He is currently President of INSARG. He is Past President of FOGSI, ISAR, ISPAT, IFUMB; Vice President of WAPM & SAFOG and a stalwart in the field of infertility has been teaching the subject for years.

Nidhi Gupta is a Professor of Obstetrics and Gynecology at SN Medical College, Agra with a vast experience in the field of Obstetrics and Gynecology. She is an excellent teacher and academician with a passion for teaching.

Neharika Malhotra is a young dynamic obstetrician and gynecologist from Agra. She is a bright upcoming star in the field of infertility with new ideas and methodology of teaching. Chair YTP committee FOGSI.

Jaideep Malhotra is a great academician and medical teacher of this field and has given many practical tips for these procedures. She is Past President of FOGSI, ASPIRE, ISAR, IMS; President of SAFOM & ISPAT and a stalwart in the field of infertility has been teaching the subject for years.

Kuldeep Singh is an experienced sonologist of India.

Available at all medical bookstores
or buy online at www.jaypeebrothers.com



JAYPEE BROTHERS
Medical Publishers (P) Ltd.
www.jaypeebrothers.com

Join us on facebook.com/JaypeeMedicalPublishers

Shelving Recommendations
GYNECOLOGIC SURGERY
VAGINAL SURGERY

