

## **SYLLABUS FOR FELLOWSHIP IN ENDOGYNECOLOGY**

### **(Gyne Laparoscopy & Hysteroscopy)**

#### **INTRODUCTION :**

The practice patterns in gynecology has changed significantly in the last two decades. Increasing use of rigid and flexible Endoscopes for diagnostic and therapeutic techniques, and their applications in Minimally Invasive Surgery has been a significant reason for this change. With increasing performance of advanced endoscopic procedures acquiring these skills have become mandatory for practicing gynecologists. Residents and Gynecologist are currently entering the practice in gynec surgeries after being trained in conventional open procedures. Their exposure and training laparoscopic and hysteroscopic surgery is often insufficient. Endo gynec procedures should now be significant part of any gynec practice and as such opportunities for training in this area should be widely available.

#### **TRAINING OF ENDOGYNECOLOGY (Gyne Laparoscopy & Hysteroscopy)**

#### **DEFINITION :**

Fellows in Endogynecology will be fully qualified gynecologist who have had a further period of training in Minimal access surgery programs which are practical and evidence based. The development of such educational programs will adequately prepare residents and gynecologists for the use of minimally invasive surgery in their practice.

## **AIM OF THE TRAINING :**

Minimal Access Surgery provides significant benefit to the patients in terms of shorter recovery periods, less pain, less trauma, shorter hospitalization. Currently there is lack of well structured and adequate educational programs in endogynecological surgery, this programme aims to adequately prepare Gynecologist in the Art of minimal access surgery and correct the imbalance between the requirements and availability in the society.

## **OBJECTIVES OF THE TRAINING :**

To train a specialist to be capable of

- A. Understanding and performing Endogynec procedures in appropriate situation.
- B. Making endogynec surgery an essential part of gynecological surgery armamentarium.
- C. Teaching, research and auditing in endogynecology.
- D. Co-ordinating and promoting collaboration in organizing the services
- E. Providing leadership in developing research within the specialty

## **ORGANIZATION OF TRAINING:**

A. Training programs in Endoscopic surgery should be in a multidisciplinary centre of minimally invasive surgery and should be organized by a qualified, accredited specialist in Gynec Endoscopy.

B. The Centre should use the guidelines and protocols of national and international professional bodies which are reviewed at regular intervals.

## **THE MEANS OF TRAINING :**

### Entry requirements :-

- MS (OBG)/MD (OBG)/DNB in OBG from an institute or medical college recognized by medical council of India.
1. The trainees should participate in all relevant activities of the training unit such as the care of Out -Patients and In -Patients, on call duties during both day and night, also participating in educational activities, including the teaching of other health professionals. Participation in audit and clinical or basic research is essential.
  2. The duration of Gynec Endoscopic surgery training should be a Minimum of One Year approved programme and should cover the clinical and research aspects.
  3. Educational tools
    - Good text books on MIS written by leading and experienced Authors
    - Video tapes /CD ROMS
    - Simulators for Endo – Training
    - Box trainers to master the skills
    - Endo trainer rooms with adequate space and good air-conditioning facility to work long hours in the simulators so the trainee can avoid fatigue.
    - Endo-cameras mounted on a special stand with the monitors
    - Special hand instruments to learn the hand and eye co-ordination
    - To learn depth perception
    - To learn tactile sensations
  4. The training should be structured throughout with clearly defined targets to be met after specified intervals. An education plan should be drawn up in consultation with the trainees at the beginning of each attachment and progress should be monitored regularly, by means of log book.
  5. Animal laboratory as and when necessary

### **ASSESSMENT OF TRAINING :-**

Each student is evaluated every month by programme coordinator.

### **COURSE EVALUATION:-**

The trainee gets the opportunity to evaluate the course.

### **LOG BOOKS :-**

The log books are to be submitted for monthly evaluation of the progress and to evaluate the learning curve.

### **EXIT EXAMS :-**

The degree is awarded after a final exit examination, at the end of one year training period.

### **TRAINING PROGRAMME SYLLABUS:-**

#### **ENDOSCOPIC GYNECOLOGY AND HYSTERECTOMY**

##### **A. General Principles :**

1. Equipment set up and trouble shooting
2. Patient preparation
3. Anesthesia and Monitoring
4. Access to abdomen
5. Creating pneumoperitoneum
6. Abdominal wall lift devices
7. Principles of Endoscopic haemostasis
8. Principles of Electrosurgery
9. Hysteroscopic entry techniques
10. Hysteroscopic operative techniques

## **COURSE OBJECTIVES :-**

Gaining Endoscopic skills is very important. Skill in conventional surgical procedure does not necessarily confer skills in endoscopic surgery. The course is aimed at bridging this gap and is formulated with the following objectives in mind.

- A. To master the tactile sensation, altered hand and eye co-ordination due to the length and design of instruments and the absence of three dimensional depth perception due to two dimensional representation of the three dimensional abdominal cavity.
- B. To learn about specialized endoscopic equipments and instrumentation.
- C. To learn the principles of Endoscopic and Hysteroscopic procedures.
- D. To learn the indications, contra-indications and limitations of MAS and various procedures.
- E. To perform abdominal insufflation using Veress needle and Hasan's open technique
- F. To perform Endoscopic procedures on live animal models in the purposeful, wet laboratory.
- G. Learn to perform on human patients (Endoscopic surgery and Hysteroscopic surgery)
- H. Sterilization and maintenance of instruments and video equipments.
- I. Documentation, storage data and presentation.
- J. Anesthesia in laparoscopic surgery.
- K. Trouble shooting in MAS.
- L. Electro surgery and other newer energy sources.
- M. Learning about prosthetic meshes and fixation devices.
- N. To learn about tissue morcellators and organ retrieval systems.
- O. To know about the complications and its managements in MAS.
- P. Basic and advanced skills in Endo-knotting and intracorporeal suturing techniques.
- Q. Diagnostic and therapeutic Hysteroscopy.

## **SETTING UP OF A LAPAROSCOPIC UNIT :-**

### **A. ROOM LAYOUT AND EQUIPMENT POSITION :**

- General considerations include the size of operating room space, location of doors, outlets for electrical and anesthetic equipments.
- To determine the optimum position and orientation for the monitor placement.
- If the room is large, the normal position for the operating table will work well for laparoscopy (30/30).
- Small operating rooms will require diagonal placement of the operating table and proper positioning of laparoscopic accessory instrumentation around the operating table.
- All equipment check list helps to ensure that all items are available and minimize delays in MAS.

### **THE BASIC INSTRUMENTS NEEDED FOR SETTING UP THE UNIT IS AS FOLLOWS :-**

1. Electrical table with leg separation facility and Lithotomy facilities.
2. Two video monitors. One for the surgeon and another for the assistants and team (optional).
3. Suction and irrigation apparatus.
4. Electrosurgical unit with proper grounding.
5. Pad equipped with current monitoring system.
6. Cart to house the laparoscopic equipments or pendants.
7. Light sources (Halogen or Xenon).

8. Electronic insufflator or Pneumoflator.

9. Fibro-optic cable.

10. Camera Systems

1. Single chip camera system

(or)

2. Three chip camera system

(or)

3. High definition camera systems

11. Video recorder for Data (or) computer picture

capturing systems connected to the monitors or camera consol.

12. Colour printer for documentation.

13. CO2 Cylinders

14. Endoscopic accessory instruments for basic and advanced  
procedures

15. Intra-operative ultrasound with Lap.Probe (optional)

1. Atraumatic graspers

2. Locking toothed and jawed graspers

3. Needle holders

4. Dissectors - curved and right angle

5. Bowel grasping forceps

6. Uterine manipulator

7. Tubal perturbation cannula

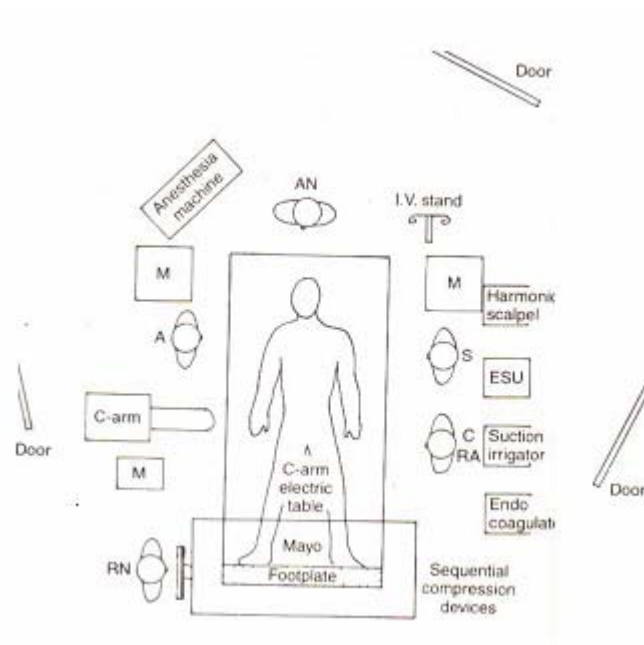
8. Babcock clamp
9. Veress needle
10. Trocars – 5mm and 10 mm
11. Metzenbaum scissors and Straight scissors
12. Hook with diathermy attachment (L-Shaped)
13. Fan retractors - 10 mm and 5mm
- 14.** Specialized retractors (optional )

**15. Vessel Sealing Systems:-**

- o Monopolar electrocautery dissection tools.
  - o Bipolar dissection tools
  - o Ultrasonically activated scalpel (optional)
  - o Gyrus plasma coagulator (optional)
  - o Ligasure (optional)
  - o Basket containing
    - Clip applicators
    - Endoloops
    - Endoscopic suture materials
    - Extra trocars
    - Robo arm (optional)
16. Additional tables should be available
- For hot saline
  - Irrigating solutions

- Hysteroscopic instruments
- Telescope – 5mm/10mm 0° and 30° telescope.
- Hysteroflators
- Hysteroscopic hand instruments
- Operative Hysteroscope.

And open surgical instruments (Conventional surgery) for emergency conversion to open from laparoscopy, should be kept ready and separate from other Lap. Instruments.



|    |                    |    |              |
|----|--------------------|----|--------------|
| AN | - Anesthesiologist | A  | - Assistants |
| S  | - Surgeon          | RN | - Mayo Nurse |
| C  | - Camera Holder    | M  | - Monitors   |
| RA | - Robotic Arm      |    |              |

- A back up UPS for lap equipments for uninterrupted surgery is very essential.

## **TROUBLE SHOOTING :**

Endoscopic procedures are inherently complex. Many things can go wrong. The operative Gynecologist must learn sufficiently about all equipments which can trouble shoot and to solve it. Common problems to be learnt are:

1. Cause of Poor insufflations
2. Reason for excessive pressure for insufflation
3. Reasons for inadequate lighting
4. Reasons for too bright lighting
5. Reasons for loss of picture on monitors
6. Reasons for poor quality pictures /fogging / haze
7. Reasons for flickering electrical interference
8. Reasons for inadequate cauterization/inadequate irrigation and suction

Note : Once the Operative Gynecologist is gowned and gloved, everything should work in MAS procedures. Otherwise it will lead to early conversion to open surgery.

## **PREOPERATIVE EVALUATION FOR HYSTEROSCOPIC & ENDOSDOPIC SURGERY;-**

1.Before surgery, evaluation by qualified anesthetist is mandatory. This should include:

Systems affected by Pneumoperitoneum; -

- Air way
- Respiratory system
- Cardiovascular System

#### Other Relevant systems

- Central nervous system
- Endocrine system
- Gastrointestinal system

#### Other relevant History

- Post anesthetic experience of the patient
- Post anesthetic family History of the patient
- Allergies to local anesthetics of the patient
- Medications taken in the past.

#### 1. Monitoring and safety considerations which should include :

1. Breath sounds (Precardial or esophageal stethoscope)
2. Electrocardiogram (continuous)
3. Blood pressure, pulse (continuous, non invasive)
4. Continuous oxygen saturation (Pulse oximeter)
5. Expired carbon dioxide (Capnograph)
6. Temperature gauge
7. Ventilator and additional monitors (optional)

1. Fire prevention is a crucial safety consideration. The operating room is an oxygen rich environment. The ends of the fibro optic cables become extremely hot and can ignite drapes. Hence fire extinguisher should be placed just outside the laparoscopic theatre.

#### **ADMINISTRATION :-**

##### **1. Research and audit :-**

Setting up the Endoscopic surgery unit, quality control and assurance, creating protocol for management and organizing and coordinating of clinical meetings. Counseling of the patients for MAS, implications, approach and other complications and getting proper consent for conversion to open if need be

### **Basic Module In MAS FOR GYNECOLOGIST'S :**

1. Diagnostic Laparoscopy
2. Laparoscopic PCOD Puncturing
3. Laparoscopic Infertility study/Tubal Perturbation
4. Laparoscopic Adhesiolysis
5. Laparoscopic Oophorectomy
6. Ectopic Pregnancy Management
7. Salpingostomy
8. Bilateral Tubal Sterilization

### **Advanced module in MAS FOR GYNECOLOGIST'S :**

- Total Laparoscopic Hysterectomy
- Laparoscopic Assisted Vaginal Hysterectomy
- Prolapse uterus – uteropexy
- For urinary stress incontinence – Bladder Neck suspension  
- Urogynecology
- Reversal of sterilisation (Tuboplasty)
- Salpingostomy and fimbrioplasty
- Laparoscopic fertility promoting procedures
- Falloposcopy and other tubal cannulation techniques
- Ovarian surgery
- Ovarian torsion
- Ovarian Endometriomas
- Polycystic Ovaries / Surgical Management
- Lap. management if Tubo-Ovarian Abscess

### Laparoscopic Uterine Surgery:-

- Laparoscopic uterine nerve ablation for intractable dysmenorrhea
- Laparoscopic surgery for pelvic pain
- Laparoscopic Myomectomy
- Laparoscopic Leiomyoma Coagulation (Myolysis)
- Laparoscopic Total Hysterectomy
- Laparoscopic Supracervical Hysterectomy
- Laparoscopic Döderlein Hysterectomy
- Laparoscopic surgery for Endometriosis and Adhesions
- Laser vaporization of Endometriosis
- Monopolar Electroexcision of endometriosis
- Laparoscopic treatment for advanced Endometriosis

### **Hysteroscopic surgery :-**

- Initiating a Hysteroscopic program and Hysteroscopic instrumentation
- Diagnostic Hysteroscopy – Technique and documentation
- Distention media and fluid systems
- Hysteroscopic resection of fibroids
- Hysteroscopic metroplasty
- Endometrial ablation technique

Laparoscopic pelvic floor repair and incontinence procedures :

1. Laparoscopic colposuspension
2. Laparoscopic repair of Enterocele and pelvic floor support procedure

The academic activities of the program in the hospital should include:-

1. Regular academic sessions
  2. Case discussion and seminars
  3. Paper presentation
  4. Audit/ Project/Research
  5. Thesis
  6. Conferences/CME's/Live workshops
- Fine tuning skills in the purpose built animal (wet) laboratory
  - The programme is organized to have maximum “Hands-on” practice sessions in the “Purpose Built” animal laboratory.
  - Lecture hall for CME, conference and live workshop transmission with good acoustics.

**WET LAB**

The live animal lab should be attached to the hospital campus which should have the following:

1. Preferably airconditioned
2. A regular tilting table

3. A cart for keeping the following equipments
  - a. Camera
  - b. Light source
  - c. Fibro optic cables
  - d. Diathermy should be placed separately in another trolley to avoid electrical disturbances.
  - e. Suction /Irrigation Apparatus
  - f. CO<sub>2</sub> cylinders
  - g. CO<sub>2</sub> insufflators.
  - h. Mask anesthesia Equipments (Basic Boyle's) for animal anesthesia
  - i. Pre-Medication chamber for animals
  - j. Drugs /Anesthetic agents
  - k. Post surgery - Recovery area
  - l. IV Fluid stands
  - m. Monitors
  - MHelper's for washing the hand instruments
  - n. Disinfectants
  - o. A qualified Vet. Anesthetist / Vet.Surgeon should be included for the programme.

## **TO SUM UP**

Advances in Gynec Endoscopy and Hysteroscopy has carved out for itself an irreplaceable niche in the field of Gynecology. This is a fascinating frontier of medical science. Learning the art of MAS is not easy. This requires considerable technical expertise and good infrastructure. Therefore with the rapidly increasing need for learning Endogynecology, it has become imperative to ensure safety and safe guard against possible mishaps. The need of the hour is a properly structured, thorough, logical and effective training programme to train the specialists in this ever expanding field and to ensure high standards of quality.

## **RECOMMENDED READINGS :-**

### **1. Endoscopic Surgery for Gynecologists**

By Chris Sutton & Michal Diamond

### **2. Diagnostic and Operative Hysteroscopy**

By Tirso Perez – Medina  
Enrique Cayuela Font  
Victor Gouel

### **3. Tubal Infertility**

By IVO Brosens  
Alan Gordon

### **4. Atlas of Gynecological Endoscopy**

By Dr.Nutan Jain

### **5. Atlas of Endoscopic Techniques in Gynecology**

By Jeffrey.M.Goldberg &  
Tommaso Faclone

### **6. Atlas of Gynecological Endoscopy**

By Alan.G.Gordon  
B.Victor Lewis  
Alan.H.Decherney