



Sri Lakshmi Narayana Institute of Medical Sciences

Date 3/10/2020

From
Dr K Balagurunathan,
Professor and Head,
General Surgery,
Sri Lakshmi Narayana Institute Of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

To
The Dean,
Sri Lakshmi Narayana Institute Of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: **BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING , 30 hrs course on NOV 2020 TO JAN 2021**. We solicit your kind permission for the same.

Kind Regards

PROFESSOR & HOD
DEPARTMENT OF GENERAL SURGERY
Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERRY - 605 002

DR K BALAGURUNATHAN

HOD, GENERAL SURGERY

FOR THE USE OF DEANS OFFICE


Names of Committee members for evaluating the course:

The Dean: DR. JAYAKUMAR

The HOD: DR K BALAGURUNATHAN

The Expert: DR ASAYAS BOSCO CHANDRA KUMAR

The committee has discussed about the course and is approved.



Professor General Surgery
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Kudalakkam, Puducherry-605 002.

Subject Expert

(Sign & Seal)



PROFESSOR & HOD
DEPARTMENT OF GENERAL SURGERY
Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERRY - 605 002

(Sign & Seal)



Dean
DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF
MEDICAL SCIENCES
OSUDU, KUDALAKKAM
PUDUCHERRY - 605 002



OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Circular

06.10.2020

Sub: Organising Value-added Course: BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing value added course “**BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING**”.

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before 1ST NOV 2020. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KODAPAKKAM POST,
PUDUCHERRY - 605 502

Course Proposal

Course Title: BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING

Course Objective:

- 1. Introduction**
- 2. Preparation**
- 3. Fiberoptic endoscopy**
- 4. Assessment**
- 5. Therapeutic uses**
- 6. Hands on training**
- 7. Laparoscopy basics**
- 8. Indications and contraindications of laparoscopy**
- 9. Preoperative evaluation**
- 10. Basic laparoscopic equipment**

Course Outcome:

Course Audience: MBBS UNDERGRADUATES

Course Coordinator: DR ASAYAS BOSCO CHANDRA KUMAR

Course Faculties with Qualification and Designation:

- 1. Dr Balagurunathan , Prof and HOD General Surgery**
- 2. Dr Asayas Bosco Chandra Kumar, Prof General Surgery**

Course Curriculum/Topics with schedule (Min of 30 hours)

SINo	Date	Topic	Time	Hours	Faculty
1.	15/11/2020	1. Introduction	4-6PM	2	Dr Asayas Bosco Chandra Kumar
2.	17/11/2020	1. Introduction	4-5PM	1	Dr Balagurunathan
3.	21/11/2020	2. Preparation of patient	4-6PM	2	Dr Asayas Bosco Chandra

					Kumar
4.	25/11/2020	3.Fiberoptic endoscopy	4-6PM	2	Dr Balagurunathan
5.	28/11/2020	3.Fiberoptic endoscopy	4-7PM	3	Dr Asayas Bosco Chandra Kumar
6.	3/12/2020	4.laparoscopy basics	4-7PM	3	Dr Balagurunathan
7.	4/12/2020	4. laparoscopy basics	4-7PM	3	Dr Asayas Bosco Chandra Kumar
8.	7/12/2020	5. basic laparoscopic equipment	4-6PM	2	Dr Balagurunathan
9.	9/12/2020	5. basic laparoscopic equipment	4-6	2	Dr Asayas Bosco Chandra Kumar
10.	13/12/2020	6. laparoscopy indications and contraindications	4-7PM	2	Dr Balagurunathan
11.	16/12/2020	7. Therapeutic uses and Assessment	4-7PM	2	Dr Asayas Bosco Chandra Kumar
12..	18/12/2020	8. Hands on training	4-7PM	3	Dr Balagurunathan
13.	22/12/2020	8. Hands on training	4-7PM	3	Dr Asayas Bosco Chandra Kumar
			TOTAL HOURS	30	

REFERENCE BOOKS: (Minimum 2)

1. Schwartz's Principles of Surgery, 11th Edition
2. Bailey And Love's Short Practice of Surgery 27th Ed
3. Masteryof Endoscopic and Laparoscopic surgery – Lee L.Swanstrom, Nathaniel.J.Soper

VALUE ADDED COURSE

1. Name of the programme & Code

BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING GS02

2. Duration & Period

30 hrs & NOV 2020 – JAN 2021

3. Information Brochure and Course Content of Value Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Multiple choice questions- *Enclosed as Annexure- III*

6. Certificate model

Enclosed as Annexure- IV

7. No. of times offered during the same year:

ONE TIME

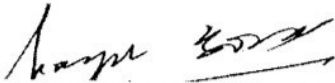
8. Year of discontinuation: 2021

9. Summary report of each program year-wise

Value Added Course NOV 2015 – JAN 2016					
Sl. No	Course Code	Course Name	Resource Persons	Target Students	Strength & Year
1	GS02	BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING	Dr. ASAYAS BOSCO CHANDRA KUMAR	MBBS	20 (NOV 2020 – JAN 2021)


10. Course Feed Back

Enclosed as Annexure- V


Professor General Surgery
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Kudapakkam, Puducherry-605 502.

RESOURCE PERSON

DR ASAYAS BOSCO CHANDRAKUMAR
(PROF GENERAL SURGERY)


PROFESSOR & HOD
DEPARTMENT OF GENERAL SURGERY
Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERY - 605 502
CO-ORDINATOR

DR K BALAGURUNATHAN
(HOD GENERAL SURGERY)

**BASIC ENDOSCOPY AND LAPAROSCOPY
TRAINING**

PARTICIPANT HAND BOOK

COURSE DETAILS

Particulars	Description
Course Title	BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING
Course Code	GS02
Objective	<ol style="list-style-type: none"> 1. Introduction 2. Preparation 3. Fiberoptic endoscopy 4. Assessment 5. Therapeutic uses 6. Hands on training 7. Laparoscopy basics 8. indications and contraindications of laparoscopy 9. preoperative evaluation 10. basic laparoscopic equipment
Further learning opportunities	Recent advances in endoluminal surgery
Key Competencies	On successful completion of the course the students will have skill in handling surgical patients for endoscopy and laparoscopy
Target Student	MBBS Students
Duration	30hrs
Theory Session	10hrs
Practical Session	20hrs
Assessment Procedure	Multiple choice questions

INDICATIONS

- Endoscope every patient with dysphagia except when this is full explained by the presence of neurological or neuromuscular disease.
- Endoscope patients with suspected disease in the oesophagus producing pain on swallowing (odynophagia), heartburn not responding to simple medication or arising de novo in patients over 50 years, bleeding, or if accidental and iatrogenic damage are suspected.

9. In anxious patients, or those in whom intervention (e.g. dilatation) is required, insert a small plastic cannula into a peripheral vein and through it inject slowly 1–2 mg of midazolam until the patient's eyelids just begin to droop. Remember that it takes 2 minutes for the full effect of midazolam to develop.

FIBREOPTIC ENDOSCOPY

- Lay the patient on the left side with hips and knees flexed. Place a plastic hollow gag between the teeth. Ensure that the patient's head is in the midline and that the chin is lowered on to the chest.
- Lubricate the previously checked end-viewing instrument with water-soluble jelly.
- Pass the endoscope tip through the plastic gag, over the tongue to the posterior pharyngeal wall. Depress the tip control slightly so that the instrument tip passes down towards the cricopharyngeal sphincter. Do not overflex the tip or it will be directed anteriorly and enter the larynx. Visualize the larynx and pass the endoscope just behind it.
- Ask the patient to swallow. Do not resist the slight extrusion of the endoscope as the larynx rises, but maintain gentle pressure so that it will advance as the larynx descends and the cricopharyngeal sphincter relaxes. Advance the endoscope under vision, insufflating air gently to open up the passage. Aspirate any fluid. Spray water across the lens if it becomes obscured. If no holdup is encountered, pass the tip through the stomach into the duodenum then withdraw it slowly, noting the features. Remove biopsy specimens and take cytology brushings from any ulcers, tumours or other lesions.
- If a stricture is encountered note its distance from the incisor teeth. Sometimes the instrument will pass through, allowing the length of the stricture to be determined. Always remove biopsy specimens and cytology brushings from within the stricture. If the stricture is benign in appearance, gentle dilatation to 12 mm can be attempted if the patient is symptomatic.
- Dilatation of malignant strictures is not indicated as any benefit is

short-lasting and the risk of perforation is high (6–8%). Get biopsies and confirm the diagnosis prior to intervention. If nutritional support is required, fluoroscopic passage of a feeding nasogastric tube can be performed.

Assess

1. Note the level of each feature. The cricopharyngeal sphincter is approximately 16 cm from the incisor teeth. The deviation around the aortic arch is 28–30 cm, the cardia lies at 40 cm and here the lining changes abruptly from the pale, bluish, stratified oesophageal epithelium to the florid, pinker, gastric columnar-cell epithelium.
2. Oesophagitis is usually from gastro-oesophageal reflux, but is not necessarily associated with hiatal hernia. Consult a colour chart that illustrates the grades of oesophagitis. Most commonly there are red streaking erosions just above the cardia. Oesophagitis may be seen above a benign stricture. Occasionally, in advanced achalasia, one may see a mild diffuse oesophagitis from contact with fermenting food residues. Thick white plaques indicate monilial infection, usually in association with oral involvement. Confirm the diagnosis by taking mucosal scrapings.
3. Sliding hiatal hernia produces a loculus of stomach above the constriction of the crura with a raised gastro-oesophageal mucosal junction. To determine the level of the hiatus, ask the patient to sniff, and note the level at which the crura momentarily narrow the lumen. Reflux and oesophagitis may be visible. A rolling hernia is visible only from within the stomach by inverting the tip of a flexible instrument to view the apparent fundic diverticulum. If the diagnosis is a possibility, confirm with a barium study.
4. Frank ulceration in the oesophagus is unusual, but may be due to severe reflux disease. In Barrett's oesophagus the lower gullet is lined with modified gastric mucosa and an ulcer may develop in the columnar-lined segment. In all cases of Barrett's take biopsies of the columnar segment from all four quadrants at 2-cm intervals. In patients with dysplasia even more biopsies are required for accurate assessment. Use 'jumbo' forceps. Ulcerating carcinomas may develop at any level. In most Western countries the majority of cancers comprise adenocarcinomas and these

arise in the lower oesophagus in association with Barrett's oesophagus. Take multiple biopsies and cytological brushings from a number of areas of all ulcers

5. Strictures from peptic oesophagitis or, rarely, ulceration in a Barrett's oesophagus develop at any time from birth onwards, but more frequently occur in middle or old age. Almost always there is a coincidental hiatal hernia. If there is no hernia below the stricture, suspect cancer. Also suspect cancer if there is food residue above a stricture. Food residue may also be seen in achalasia and may be the only diagnostic clue. Take multiple biopsies and brushings for cytology. The cause of Schatzki's ring is unknown. It is usually asymptomatic, seen radiologically at the junction between gastric and oesophageal mucosa. Caustic strictures develop at the sites of hold-up of swallowed liquids at the cricopharyngeus, at the aortic arch crossing and at the cardia. Webs or strictures in the upper oesophagus are uncommon. However, it is not unusual to see a patch or ring of ectopic gastric mucosa in the upper oesophagus 1–2 cm below the cricopharyngeus, the so-called 'inlet patch'. Stricture may arise from external pressure, of which by far the most common cause is bronchogenic carcinoma.
6. Mega-oesophagus may be seen in achalasia of the cardia, but is now uncommon as most cases are diagnosed long before dilatation takes place. Mega-oesophagus may also be seen in the South American Chagas' disease and in some cases of advanced scleroderma.
7. Pulsion diverticula are related to abnormal oesophageal motility and are seen above the cricopharyngeus muscle (Zenker's diverticulum or pharyngeal pouch) and above segments of presumed spasm. Traction diverticula in the mid-oesophagus develop as a result of chronic inflammation of mediastinal glands, especially from tuberculosis.
8. Oesophageal varices are usually recognized just above the cardia as convoluted varicose veins, which may extend into the upper stomach.

Aftercare

1. Make sure the patient does not have chest pain, air emphysema in the neck, or a raised temperature. Have a plain chest radiograph taken or perform a contrast swallow.
2. If there is evidence of a leak, confirm it and identify the site with X-rays using a water-soluble contrast medium. If an expanding stent is not sealing a leak consider inserting a second stent. Start the patient on broad-spectrum antibiotics and withhold food and fluids until the patient is entirely comfortable and a contrast swallow shows no leak.
3. Following stent insertion, warn the patient against swallowing unchewed food, particularly lumps of meat, fruit skins and stones, and to wash down the food with sips of water. Aerated drinks such as sodium bicarbonate solution (half a teaspoonful in half a glass of water half an hour before meals) or fresh pineapple juice help to wash away adherent mucus that may block the tube.
4. It is now extraordinarily uncommon to fail to intubate a tumour. If it cannot be done, a feeding gastrostomy or jejunostomy may be inserted after full discussion with the patient. This poses ethical and philosophical dilemmas, but these must be faced. However, always remember that the aim of palliation is to improve the quality of remaining life. If a particular therapy will not improve the quality of life in an individual patient, do not use it.

LAPAROSCOPY IN GENERAL SURGERY

I. INTRODUCTION

No surgical procedure is without risk. Despite the minimally invasive nature of laparoscopic surgery, the potential for adverse outcome is present and should be taken as seriously as in a traditional open procedure. Patients must be carefully evaluated preoperatively to determine their eligibility for a laparoscopic approach. In addition to the patient characteristics and the nature of the disease process that must be considered for open surgery, the surgeon must also consider factors specific to the execution of the procedure laparoscopically. Patient selection and preparation for a laparoscopic procedure is the first step in ensuring a successful outcome.

II. PREOPERATIVE EVALUATION

A careful history and physical examination are the cornerstones of patient selection for surgery. Preexisting conditions that predispose patients to both anesthetic and surgical complications must be identified. Signs and symptoms suggestive of cardiac or pulmonary disease should be specifically sought, even if a previous diagnosis has not been established. Preoperative laboratory evaluation depends on the nature of the surgery, the patient's past medical history, and the preferences of both the surgeon and anesthesiologist. In general, this may include a complete blood cell count, serum electrolyte determination, and urinalysis. In patients older than 40, a screening chest radiograph and an electrocardiogram may be indicated. Coagulation studies are needed in patients with a personal or family history of a bleeding diathesis is important to carefully evaluate the patient with known or suspected pulmonary disease prior to undertaking a laparoscopic procedure, as pneumoperitoneum and hypercarbia may be poorly tolerated. Pulmonary function testing with arterial blood gas determination may be helpful in deciding if the patient can tolerate the planned procedure.

It is important to determine the baseline pCO₂ in patients with known pulmonary disease so that the extent of hyperventilation can be better evaluated intraoperatively. Similarly, patients with known or suspected cardiac disease need adequate preoperative risk evaluation because of the effect of pneumoperitoneum on cardiac function (i.e., decreased venous return secondary to inferior vena cava compression with a resulting drop in cardiac output) and the fact that some laparoscopic procedures may take longer than their open counterparts. This evaluation may involve cardiac stress testing and should be done in consultation with a cardiologist.

Several other factors specific to a laparoscopic procedure should be considered preoperatively.

Prior incisions-

The past surgical history and the location of prior incisions should be specifically considered as this will aid in the planning of access method and trocar placement.

Umbilical abnormalities-The patient should be specifically examined for an umbilical hernia or urachal cyst as this may also affect trocar placement.

Positioning limitations-The ability to abduct the arms and hips should be assessed, as many laparoscopic procedures are performed in the lithotomy position.

Presence of ascites-The presence of ascites will complicate abdominal access and may complicate the postoperative course if the fluid becomes infected or leaks from the trocar sites.

History of deep venous thrombosis (DVT)-Patients with a history of a DVT should be carefully evaluated preoperatively, as many laparoscopic procedures are lengthy, require the reverse Trendelenberg position, and can have significant inferior vena cava compression secondary to the pneumoperitoneum. All patients should have compression stockings in place before the induction of general anesthesia; those patients at higher risk (e.g., prior DVT or cancer) may need additional measures including pneumatic compression devices.

III. CONTRAINDICATIONS TO LAPAROSCOPIC SURGERY

As time has passed and experience has accumulated, the contraindications to laparoscopic procedures have been modified. It is important to emphasize that the documented benefits of the laparoscopic approach—a hastened postoperative recovery and improved cosmesis—do not warrant placing the patient at increased risk for adverse surgical outcome. Thus, good judgment must be exercised in any circumstance where a condition exists that may make the laparoscopic procedure more risky than open surgery.

A. Absolute Contraindications

In the following clinical situations, the use of laparoscopy is either prohibitively unsafe for the patient or is almost certain to lead to conversion to laparotomy.

1. **Hypovolemic shock-**Patients showing signs of shock due to hypovolemia are unlikely to tolerate the further decrease in venous return caused by the

pneumoperitoneum. In addition, these patients will benefit from the most expeditious operation, as their end organ perfusion will only be further challenged by a period of general anesthesia.

A laparoscopic procedure is contraindicated in patients with significant ongoing abdominal bleeding due to both hypovolemia and technical issues. Significant bleeding makes a laparoscopic procedure difficult to perform because the view is obscured and the surgeon cannot rapidly identify or easily correct the problem.

2. Hemodynamic instability-Patients with hemodynamic instability for any reason (hypovolemia, depressed cardiac function, sepsis) are poor candidates for laparoscopy. The effects of pneumoperitoneum as well as the extremes in patient position that are sometimes required during laparoscopy will be poorly tolerated by patients already compromised from a cardiovascular standpoint.

3. Massive abdominal distention-In patients with extremely dilated intestine, it is unsafe to attempt to establish pneumoperitoneum due to the likelihood of bowel puncture. In addition, there will not be sufficient working room in which to operate.

4. Inability to tolerate a laparotomy-Patients who are not candidates for a laparotomy due to severe systemic disease should not be considered for laparoscopic procedures.

5. Surgeon inexperience-As with any surgical procedure, if the surgeon is not adequately trained, the procedure should not be attempted. Advanced laparoscopic skills are required to successfully complete many procedures, and without them the procedure should not be done laparoscopically.

B. Relative Contraindications

In the following clinical situations the use of laparoscopy is not generally advised but may be attempted in specific clinical scenarios by highly trained surgeons.

1. Generalized peritonitis of unclear origin-Patients with diffuse peritonitis, particularly when the etiology is unclear, are not ideal candidates for a laparoscopic exploration. Because of the difficulty involved with an adequate and expeditious abdominal exploration in this setting, these patients are best approached by laparotomy.

2. Advanced cardiopulmonary disease-Patients with severe cardiac or pulmonary disease are poor candidates for surgery in general and can be further compromised by a laparoscopic approach. The cardiopulmonary effects of pneumoperitoneum and the duration of the procedure may make an open approach more suitable for these patients.

3. Advanced pregnancy-Laparoscopic procedures, particularly in the lower abdomen, are particularly difficult in a near-term gravida. The uterus in late pregnancy simply makes access to the appendix or pelvic organs impossible. Laparoscopic procedures in the first and second trimesters have been shown in several series to be safe for both mother and fetus when performed with proper precautions by experienced individuals

4. Uncorrectable coagulopathy-In most cases patients with an uncorrectable coagulopathy are more safely approached through a traditional laparotomy where bleeding complications may be more easily and quickly controlled.

BASIC LAPAROSCOPIC EQUIPMENT

The basic laparoscopic equipment includes four essential constituents:
the insufflation system
imaging system
irrigation/aspiration unit
electrocautery unit.

Familiarity with the function and use of these systems by the operating team is essential. The presence and functionality of all necessary equipment must be assessed before the patient arrives in the operating room.

A. Insufflation System

The insufflation system allows the surgeon to create a working space in the abdomen in which to see and operate. Pneumoperitoneum is then maintained throughout the procedure, and it should easily be controlled directly by the surgeon as well as the circulating nurse. In most hospitals, a laparoscopy cart is used to house the insufflator system directly below the video monitor. The insufflation system should be continuously in direct view so the surgeon can monitor its minute-to-minute function.

The major components of an insufflation system are the insufflant, the insufflator, and the insufflation needle or trocar.

For laparoscopic procedures, the insufflant medium is

a gas. Various gases have been evaluated for laparoscopic surgery, including air, oxygen, carbon dioxide (CO₂), nitrous oxide, and inert gases such as xenon, argon, and krypton.

Air and inert gases are insoluble in blood and therefore carry a risk of air embolus. Oxygen is flammable and therefore is not used. The preferred agent in the majority of cases is CO₂, because it is not flammable and rapidly dissolves in blood, thus greatly reducing the risk of gas embolus.

The insufflator is a device that allows the flow of gas from the tank into the space being insufflated. Standard functions include adjustable rate of flow (in L/min), an intraperitoneal pressure gauge (in mmHg), display of total amount of gas administered (in L), and the tank pressure of the insufflant.

Most units offer variable flow rate settings (low, 1-5 L/min; medium, 6-10 L/min; and high, 11-15 L/min), whereas others have an adjustable range of flow in 0.5 L increments or less.

Typically, during initiation of insufflation to obtain a Pneumoperitoneum, low flow rates are used. If initial insufflation pressures are not excessive and a Pneumoperitoneum is being properly attained, the flow rate is then increased. Pressure should be maintained between 10 and 15 mmHg during laparoscopic procedures. At high pressures (> 25 mmHg) the risk of gas absorption and embolism is greatly increased. Furthermore, there is increased risk of decreased venous return resulting from compression of the inferior vena cava, impaired ventilation secondary to pressure on the diaphragm, and the development of systemic acidosis.

B. Imaging System

The quality of the imaging system is extremely important as it functions as the "eyes" of the operating team. Components include the laparoscope, camera, monitor, and lightsource. The laparoscope allows light transmission into the peritoneal cavity to the surgical field and image transmission out of the peritoneal cavity to the camera. Most laparoscopes consist of a rigid rod-lens imaging system, an eyepiece, and a flexible fiberoptic lightconducting cable.

The most common sizes of laparoscopes used are the 5 and 10 mm scopes; the larger-diameter scopes are capable of transmitting greater amount of light, provide a wider field of vision, and offer better image resolution than do smaller diameter scopes.

Both 5 and 10 mm laparoscopes are available with either straight or angled lenses.

The angled scopes enable the surgeon to look around and over tissues. The direction of tilt of the objective lens for an angled scope is usually opposite to the position of the light cable attachment on the circumference of the scope. There are also multiple angled laparoscopes: 30-degree, 45-degree, and 50-degree scopes.

Direct vision laparoscopy has been replaced by modern camera/video systems. The camera magnifies the endoscopic view IS-fold, allowing high-resolution imaging of anatomical details.

The camera attaches to the eyepiece of the laparoscope and transmits digitized optical information from the scope via cable to the video box; the digital image data are then reconstructed and displayed on the monitor. The camera should be focused, and the camera/video system should be white-balanced to optimize image color representation. Insertion of a room-temperature laparoscope into the peritoneum will result in fogging of the lens because of the temperature differential and condensation on the lens.

This can be avoided by warming the time of the scope in hot saline solution before it is inserted. Commercially available antifog agents may also be useful to minimize lens fogging problems.

Poor image quality is more commonly the result of malfunction of an instrument or improper assembly of components rather than malfunction of the monitor itself.

Frequent causes of poor image quality include inadequate light input from the light source, malfunction of the video or light cable, or incorrect attachment of these components to their respective units.

Light sources consist of high-intensity bulbs filled with xenon, mercury, or halogen vapor to provide bright illumination. The output intensity is adjustable and can be controlled at the source. Too much illumination may result in imagewashout. Some units are equipped with automatic light level adjustment to avoid this problem and optimize illumination. Light is transported from the light source to the laparoscope by a fiberoptic cable. Light cables are flexible and have both laparoscope- and light source-specific couplers. Connections should fit properly and tightly. Rough handling of the light cable may fracture the delicate optical fibers, thus decreasing overall light transmission. The light cord should be checked before the procedure by plugging it into the light source; any dark areas visible in the end of the light cord indicate broken

fibers.

c. Irrigation/Aspiration System

In any laparoscopic procedure, a surgeon will benefit by using an irrigation and aspiration device to keep the operating site clean. In most operating rooms, wall suction units with adjustable degrees of suction pressure are used for aspiration. Irrigation units vary, but most hospitals use 1-3 L crystalloid bags, similar to those used for intravenous fluid.

The irrigation fluid can flow by gravity, but use of a pressurized bag provides more active flow and is preferred. The most commonly used irrigants are saline solution with 5000 units of heparin added per liter or lactated Ringer's solution.

Activation of the suction instrument close to fatty or other mobile tissues may lead to occlusion of the channel. When this occurs the irrigation switch can be briefly depressed to clear the channel.

If the aspirator valve is opened when the instrument tip is not immersed in fluid, the Pneumoperitoneum can be lost quickly. However, this maneuver is sometime deliberately performed to evacuate entrapped electrocautery smoke in the peritoneal cavity when it obscures vision.

D. Electrocautery

Tissue cutting and coagulation is best achieved with an electrocautery unit, which is usually controlled by a foot pedal when used laparoscopically. The most commonly used tip configurations are spatula, J hook, and right-angle (L) hook. Other electrocautery attachable instruments include scissors, dissectors, and graspers, all of which are insulated with a thin nonconductive coating and have an incorporated terminal for the electrosurgical cord so that electrical current can be passed through the instrument and delivered at its tip.

The combination of suction/irrigation and electrocautery functions in the same instrument is also commonly used. The cautery instrument should not be activated until the tip is in contact with the tissue. The entire uninsulated tip of the electrode should always be visible during use, because inadvertent injury to surrounding structures can easily occur. Caution should be exercised when using the electrode near metal clips or other uninsulated metal instruments because of the risk of electrical coupling and passage of current through these objects.

II. ROOM SETUP

Different laparoscopic procedures will require slightly different room setups. In general, the surgeon stands on the side of the table opposite the pathological process, whereas the assistant stands on the ipsilateral side. It is common practice for the camera operator to stand close to the surgeon and view the operation on the same monitor.

Typically the monitor is placed in a direct line with the surgeon and the surgical field; this has been called the *coaxial setup*. In this arrangement, visualization is maximal and instrument manipulation is easiest. The coaxial alignment can vary during the procedure as the operating site changes. Ideally, the surgeon should change position to keep in the proper line.

If the deviation becomes large enough, an adjacent instrument may obstruct the view of the operating site. If this occurs, the surgeon should establish a different viewing axis by moving the laparoscope to a position at which the angle between the camera and the instrument port is wider.

Occasionally this may require placement of an additional access port if satisfactory arrangement is not possible using the existing port locations.

When a monitor is used, the video is always opposite the surgeon. In this arrangement, hand-eye coordination is extremely difficult for the assistant, for whom the view is a mirror image. Although not ideal, mirror-image operating skills are readily attainable with advanced training and habituation. If the surgeon and assistant are on opposite sides of the table, typically two monitors are used, one opposite each person. This

is the most commonly used monitor arrangement and is preferred by most surgeons for cholecystectomy and other advanced procedures. Both surgeon and assistant have comfortable views directly in front of them. For pelvic operations the video monitor is usually placed at or near the foot of the table.

Once the monitors are positioned, the remaining basic equipment systems are positioned around the operating table at the most convenient sites. A variety of arrangements may be used to suit the particular needs of the procedure. As a general rule, the particular piece of equipment and its associated lines coming onto or off of the operating table should be situated on the same side as the person who will be using that equipment.

All lines and tubes should be carefully anchored to the surgical drape. **In** many

institutions prefabricated drapes with pockets and/or gutters are used along which lines may be secured; instruments that are not in use can be securely stored in these pockets until needed.

PATIENT POSITIONING

Pneumatic sequential compression stockings are placed on the lower extremities before anesthetic is administered after the patient has been placed on the operating table.

The patient is also tightly secured to the operating table with a restraint. After induction of anesthesia, an orogastric or nasogastric tube and urethral catheter are routinely placed to decompress the stomach and urinary bladder so that they are not inadvertently injured during trocar insertion or during the operation. The arms may be tucked at the patient's side, depending on the particular procedure being performed.

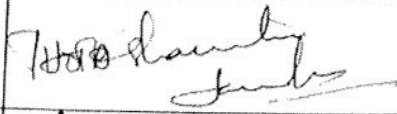
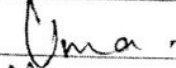

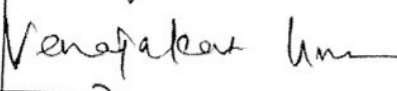
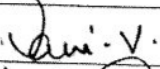
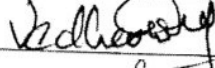
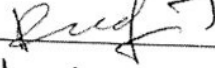
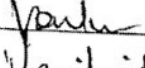
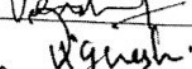
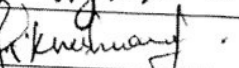
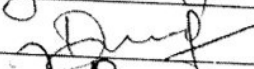
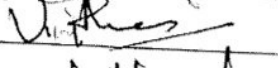
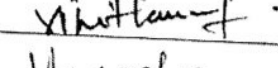

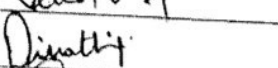

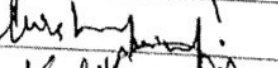
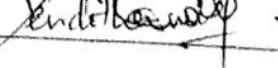


It is essential that the operating table is readily maneuverable. The patient should be positioned with the target organ elevated so that gravity pulls adjacent organs out of the way. The Trendelenburg position is used for procedures in the pelvis and lower abdomen. The reverse Trendelenburg position is used for procedures on the upper gastrointestinal tract and the biliary tree. The patient should be repositioned often to take advantage of gravity for optimal exposure. **In** addition, elevation of the operative field also helps to avoid pooling of blood in the surgical site.

Assessment Procedure

Multiple choice questions based assessment after successful completion of theory and practical sessions

VALUE ADDED COURSEBASIC ENDOSCOPY AND LAPAROSCOPY TRAINING GS02

List of Students

MBBS Student			
Sl. No	Name of the Student	Register no.	Signature
1	THOTA SHARMILA JANAKI	U13MB281	
2	UMA MAHESHWARI D	U13MB282	
3	UMAYAL @ UMA	U13MB283	
4	VANAJA KATE GARFINSUNDARAM B	U13MB284	
5	VANI V	U13MB285	
6	VEDARATHINAM S	U13MB286	
7	VELMURUGANE E	U13MB287	
8	VENKADESH V S	U13MB288	
9	VENNILA T	U13MB289	
10	VIGNESH V	U13MB290	
11	VIGNESHWARAN M	U13MB291	
12	VIKRAMAN J	U13MB292	
13	VINITHA R	U13MB293	
14	VINOTH KUMAR M	U13MB294	
15	VINOTH KUMAR M	U13MB295	
16	VINOTHINI M	U13MB296	
17	VINOTHINI S	U13MB297	
18	VISHNUPRASATH S	U13MB298	
19	VISHVABRUNDHA R	U13MB299	
20	YENDETIAMRUTHA	U13MB230	



UNA NARSHWARI D
U13M4282

**SRI LAKSHMI NARAYANA INSTITUTE OF HIGHER EDUCATION
AND RESEARCH**

Annexure - IV

BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING

MULTIPLE CHOICE QUESTIONS

Course Code: GS02

I. ANSWER ALL THE QUESTIONS

1. indications for endoscopy

a. suspected disease in the oesophagus producing

b. every patient with dysphagia

c. both a and b

d. none

2. all are indications of endoscopy except

a. heartburn not responding to simple medication

b. arising de novo in patients over 50 years,

c. bleeding, or if accidental and iatrogenic damage are suspected.

d. none

3. advantages of endoscopy

a. biopsy

b. direct visualisation of lesion

c. tumor staging

d. all the above

4. advantages of endoscopy when compared to ct

a. tumor staging

b. biopsy



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AND RESEARCH**

- c. both
- d. none of the above

5. complications of endoscopy

a. perforation

b. ulceration

c. both a and b

d. none of the above

5. Numbering of suture material

a. 9-0 thinner suture

b. 2-0 is thicker

c. Both A & B are Correct

d. None of the above

6. uses of endoscopy in variceal bleeding

a. can identify bleeding varices

b. variceal banding can be done with endoscopy

c. both are correct

d. None of the above

7. management of esophageal stricture

a. balloon dilation

b. endoluminal stenting

c. both a and b

d. none of the above are correct

6/7

ASSESSOR NAME

SIGNATURE
DR. M. SUNDHARAJAN, MS.,

Reg. No. 53175

Professor General Surgery

Sri Lakshmi Narayana Institute of Medical Sciences

Osudu, Kudapakkam, Puducherry-605 502.

23/12/2020

DATE :



THOTA SHARMILA JANAKI
U13MB281

**SRI LAKSHMI NARAYANA INSTITUTE OF HIGHER EDUCATION
AND RESEARCH**

Annexure - IV

BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING

MULTIPLE CHOICE QUESTIONS

Course Code: GS02

I. ANSWER ALL THE QUESTIONS

1. indications for endoscopy
 - a. suspected disease in the oesophagus producing
 - b. every patient with dysphagia
 - c. both a and b ✓
 - d. none

2. all are indications of endoscopy except
 - a. heartburn not responding to simple medication
 - b. arising de novo in patients over 50 years,
 - c. bleeding, or if accidental and iatrogenic damage are suspected. ✓
 - d. none

3. advantages of endoscopy
 - a. biopsy
 - b. direct visualisation of lesion ✓
 - c. tumor staging
 - d. all the above

4. advantages of endoscopy when compared to ct
 - a. tumor staging
 - b. biopsy ✓



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AND RESEARCH**

- c. both
- d. none of the above

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- a. perforation
- b. ulceration
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5. Numbering of suture material

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- c. both are correct
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7. management of esophageal stricture

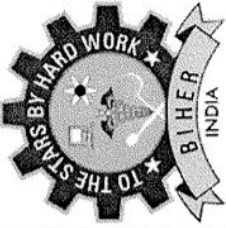
- a. balloon dilation
- b. endoluminal stenting
- c. both a and b
- d. none of the above are correct



ASSESSOR NAME : DV ASAYAS BOSCO CHANDRA KUNAR

DATE: 23/12/2015

SIGNATURE :



Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)



CERTIFICATE OF MERIT

This is to certify that VENNILA T has actively participated in the Value Added

Course on **BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING** held during NOV

2020 – JAN 2021 Organized by Sri Lakshmi Narayana Institute of Medical Sciences,

Pondicherry- 605 502, India.

Professor General Surgery
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Kudapakkam, Pondicherry-605 502.

Dr. Asayas Bosco
Chandra Kumar

RESOURCE PERSON

PROFESSOR & HOD
DEPARTMENT OF GENERAL SURGERY
Sri Lakshmi Narayana Institute of Medical Sciences
Dr. ... PONDICHERRY - 605 502

COORDINATOR



Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)



CERTIFICATE OF MERIT

This is to certify that THOTA SHARMILA JANAKI has actively participated in the Value Added Course on **BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING** held during **NOV 2020 – JAN 2021** Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Professor General Surgery
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Kudapakkam, Puducherry-605 502.

Dr.Asayas Bosco
Chandra Kumar

RESOURCE PERSON

PROFESSOR & HOD
DEPARTMENT OF GENERAL SURGERY
Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERY - 605 502

DR. K BALAGUKUNAIHAN
COORDINATOR

Student Feedback Form

Course Name: **BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING**

Subject Code: **GS02**

Name of Student: UMA MAHESHWARI Roll No.: _____

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear				✓	
2	Course contents met with your expectations				✓	
3	Lecturer sequence was well planned					✓
4	Lectures were clear and easy to understand					✓
5	Teaching aids were effective				✓	
6	Instructors encourage interaction and were helpful					✓
7	The level of the course					✓
8	Overall rating of the course	1	2	3	4	5 ✓

* Rating: 5 - Outstanding; 4 - Excellent; 3 - Good; 2 - Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Date: 22/12

Uma
Signature

Student Feedback Form

Course Name: **BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING**

Subject Code: **G502**

Name of Student: Vani V Roll No.: U13 MB285

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear					
2	Course contents met with your expectations					✓
3	Lecturer sequence was well planned					✓
4	Lectures were clear and easy to understand					✓
5	Teaching aids were effective					✓
6	Instructors encourage interaction and were helpful				✓	
7	The level of the course				✓	
8	Overall rating of the course	1	2	3	4	5

* Rating: 5 - Outstanding; 4 - Excellent; 3 - Good; 2 - Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Date:

Vani V.
Signature

Date 6/01/2020

From
Dr K Balagurunathan,
Professor and Head,
General Surgery,
Sri Lakshmi Narayana Institute Of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel


To
The Dean,
Sri Lakshmi Narayana Institute Of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

**Sub: Completion of value-added course: BASIC ENDOSCOPY AND LAPAROSCOPY
TRAINING**

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **BASIC ENDOSCOPY AND LAPAROSCOPY TRAINING** for 20 students in NOV 2020- JAN 2021. We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards


PROFESSOR & HOD
DEPARTMENT OF GENERAL SURGERY
Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERRY - 605 002

Dr. BALAGURUNATHAN

HOD General Surgery

Encl: Certificates

Photographs

