“ROLE OF DIAGNOSTIC LAPAROSCOPY IN NONSPECIFIC ABDOMINAL PAIN.

A DISSERTATION SUBMITTED TO
THE TAMILNADU DR.MGR MEDICAL UNIVERSITY

In partial fulfillment of the regulations for the award of the

DEGREE OF M.S (GENERAL SURGERY)
BRANCH-1

DEPARTMENT OF GENERAL SURGERY STANLEY MEDICAL COLLEGE AND HOSPITAL TAMILNADU DR.MGR MEDICAL UNIVERSITY, CHENNAI MAY 2020

CERTIFICATE BY THE INSTITUTION

This is to certify that dissertation **ROLE OF DIAGNOSTIC LAPAROSCOPY IN NONSPECIFIC ABDOMINAL PAIN."**is a bonafide record of work done by **Dr.S.NADHEEM AHAMED** in the Department of General Surgery, Stanley Medical College, Chennai, during his Post Graduate Course from MAY 2017- MAY 2020. This is submitted in partial fulfillment for the award of **M.S. DEGREE EXAMINATION- BRANCH I (GENERAL SURGERY)** to be held in May 2020 under the **Tamilnadu DR.M.G.R. Medical University, Chennai.**

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DECLARATION

I **Dr. S.NADHEEM AHAMED** solemnly declare that this dissertationtitled ""**ROLE OF DIAGNOSTIC LAPAROSCOPY IN NONSPECIFIC ABDOMINAL PAIN" ,** is a bonafide work done by me in the department of general surgery, Govt. Stanley Medical College and Hospital, Chennai under the supervision of **Prof.Dr.T.SIVAKUMAR ,M.S.** This dissertation is submitted to the Tamilnadu Dr MGR Medical university, Chennai in partial fulfillment of the university regulations for the award of M.S,degree (General Surgery), branch – 1 examination to be held in May 2020.

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CERTIFICATE BY GUIDE

This is to certify that this dissertation work titled **"ROLE OF DIAGNOSTIC LAPAROSCOPY IN NONSPECIFIC ABDOMINAL PAIN."**of the candidate **Dr S.NADHEEM AHAMED** with registration number **221711057** for the award of **M.S General Surgery degree**. I personally verified the urkund.com website for the purpose of plagiarism check. I found that the uploaded thesis file contains from introduction to conclusion pages and result shows4**%** of plagiarism in the dissertation.

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INTRODUCTION

Field of medicine has always been aparadox, wherein most of the diseases can be diagnosed

Based on history, clinical examinations and investigations. But there are quite a number of

Them who remain undiagnosed in spite of being, extensively investigated by new X-ray

Techniques, or scans and ultrasound.Sometimes There are instances where the clinical

Findings don’t correlate with the investigations reports & diagnosis of acute or chronic

Abdomen can be difficult at times. In such situations the dilemma can be resolved by

Additional work ups.For abdominal cases a diagnostic laparoscopy is considered as a useful

Modality to solve such surgical dilemmas.

MATERIAL AND METHODS

A prospective descriptive study of 40 patients with clinically undiagnosed and/or with suspicious diagnosis of abdominal pathologies who underwent Diagnostic Laparoscopy during the period between JUNE2018 TO JULY 2019 in STANLEY MEDICAL COLLEGE.

RESULTS AND ANALYSIS

A prospective descriptive study of 40 patients with surgical dilemmas. All patients underwent diagnostic laparoscopy. Out of 40, 28(70%) were female and 12(30%) were male patients. Out of 40 patients, in 35 (87.5%) we came to definitive diagnosis and in 5 (12.5.5%) cases no diagnosis could be made. Out of 35 patients, 6 had Koch's abdomen, 6 acute appendicitis, 3 chronic appendicitis,1 normal appendix,3 appendicular mass,1 appendicular mass with paraumbilical hernia,1chocolate cyst Of ovary,2 intestinal obstruction due to bands, 5 adhesions, 3 Pelvic inflammatory diseases & 2 had metastasis

. Diagnostic Laparoscopy (DL) confirmed pre-operative diagnosis in 11(27.5%) patients, changed in 9 (22.5%) and a new diagnosis was made in 15 (37.5%) patients. Out of 40 patients, 27 patients underwent definitive procedure laparoscopically. 2(5%) had open surgical intervention and in 11 (27.5%) patients were managed conservatively & no laparoscopic intervention was done.. We had 2 (5%) complications; bleeding in 1, managed laparoscopically, and wound infection in other case which was managed by antibiotics.

CONCLUSION

Diagnostic Laparoscopy is helpful in cases of surgical dilemmas. It reduces chances of unnecessary laparotomies. It is superior to imaging modalities like USG or CT in surgical dilemmas. It reduces patient suffering by establishing definitive diagnosis and thus early initiation of definitive treatment. It is therapeutic in some of the cases by performing definitive procedure. Diagnostic Laparoscopy is safe, less time consuming, cosmetic with lesser complications and lesser morbidity and mortality.

KEYWORDS

Diagnostic laparoscopy

INTRODUCTION

Field of medicine has always Been a paradox, wherein , most of the diseases can be diagnosed based on history , clinical Examinations and investigations. But Ther are quite a number of them who remain undiagnosed in spite of Being extensively investigated by new x-ray techniques, or scans, and ulttrasound.

Sometimes there are instances where the clinical findings don't correlate with the investigations reports & diagnosis of acute or chronic abdomen can be difficult at times.In such situations the dilemma can be resolved by additional work ups.For abdominal cases a diagnostic laparoscopy is considered as a useful modality to solve such surgical dilemmas.The study concentrates on the fact that undiagnosed abdominal pathology is an important cause of morbidity and the changes in the patient's quality of life and longevity that can be improved or restored to normalcy by Diagnostic laparoscopy and effective post-operative care.Diagnostic laparoscopy is a minimally invasive surgical procedure that allows rapid and thorough inspection of the whole abdominal cavity. Furthermore, it allows not only direct inspection of the abdominal cavity but also surgical intervention, if needed.Laparoscopy has definitely reduced the rate of negative non- therapeutic laparotomies in undiagnosed abdominal pain. Once diagnosis is established by DL, it also helps in proper therapeutic management of patients.

AIMS & OBJECTIVES

This study is intended to determine:-

1. To evaluate laparoscopy as a diagnostic tool in cases of abdominal pain where other clinical symptoms and investigations are not conclusive.
2. To evaluate benefits and complications of diagnostic laparoscopy.
3. To evaluate the effect of diagnostic laparoscopy on further management of patients of abdominal pain.
4. To avoid unnecessary laparotomy.

REVIEW OF LITERATURE

Laparoscopy has embraced the new millennium, wherein most of elective and emergency surgeries are done laparoscopically than the open laparotomies. Surgeons all round the world and for time immemorial have two important traitsCuriosity for the unknown.Sense of adventure.It is this curiosity which made surgeons, of the whole of the last century to devise instruments which will fit in each and every normal orifice, "Just to get a glimpse inside". As if this was not enough they then started creating artificial holes, and started observing internal structures of the body from a different perspective.“In 1901, GeorgeKelling, of Dresden coined the term "coelioskope" to describe the technique that used a cystoscope to examine the abdominal cavity of dogs. Dr.Kelling reported these results at the German Biologic and Medical Society Meeting in Hamburg.In 1910,H.C.Jacobaeus, from Stockolm, used for the first time the term "laparothorakoskopie" using this procedure on the thorax and abdomen. He also suggested employing similar technique to examine body cavities endoscopically.[1]Heinz Kalk, a german gastroenterologist, is considered the founder of the German School of Laparoscopy. Kalk developed a 135 degree lens system and a dual trocar aproach. He used laparoscopy as a diagnostic method for liver and gallbladder disease. He published his experience of 2000 liver biopsies performed using local anesthesia without mortality.

John C. Ruddock, an american internist described laparoscopy as a good diagnostic method, many times, superior than laparotomy. His instrument consisted of a built-in forceps with electrocoagulation capacity.In 1932, J Veress, of Hungary, developed the spring-loaded needle. Its main purpose was to perform therapeutic pneumothorax to treat patients suffering from tuberculosis. It current modifications makes the "Veress" needle a perfect tool to achieve pneumoperitoneum during laparoscopic surgery.”“Diagnostic laparoscopy is a minimally invasive surgery for the diagnosis of a medical ailment. The procedure allows the direct visual examination of intra abdominal organs including large surface areas of the liver, gallbladder, spleen, peritoneum, pelvic organs and retro peritoneum.”“Biopsies, aspiration and cultures can be obtained and laparoscopic ultrasound mayBe used. Laparoscopy allows a surgeon to diagnose and obtain information about Dissemination of disease and to diagnose patients with abdominal findings.”“Despite sophisticated methodology to image abdominal contents, establishment of a diagnosis prior to surgery remains difficult for several conditions. Unnecessary laparotomy is painful; increases hospital stay, increases hospital costs, & is associated with a morbidity of 5% to 22%.”Diagnostic laparoscopy was introduced as the final staging investigation in GI cancer patients who do not have advanced disease after radiological staging and therefore seem candidates for surgical resection.“The aim of DL is to detect peritoneal, superficial liver or lymphnode metastasis and locally advanced disease that may be missed on radiological staging and thus could avoid a non-therapeutic laparotomy.”

“The prerequisite for the use of laparoscopic staging is the availability, as well as the acceptance of non-operative palliative treatment for unresectable tumours.Staging laparoscopy should be performed prior to attempted resection in patients with gall bladder cancer because of the high (48-55%) incidence of hepatic and peritoneal metastasis not detected by non-invasive staging modalities.”“Due to the inaccuracy of CT and other modalities for the detection of 5 mm or smaller macro metastases on the peritoneal surface or liver, laparoscopy is recommended as the next step in the evaluation of patients with loco regional disease. Laparoscopy can detect metastatic disease in 23% to 37% of patients judged to be eligible for potentially curative resection by current-generation CT scanning.”

INDICATIONS

Intra-abdominal/retroperitoneal masses:

“Diagnostic laparoscopy can be used to perform directed biopsies and stage intra-abdominaltumor’s.” Laparoscopic ultrasound can be of use to identify masses.

Liver disease:

“Laparoscopy is indicated for cirrhotic patients when a standard biopsy is inconclusive or not desired (e.g. small liver, large volume ascites).”

Ascites:

When the aetiology of ascites remains elusive, laparoscopy may prove helpful, especially when the ascites are secondary to tuberculosis or carcinomatosis.

Abdominal pain or acute abdomen:

Laparoscopy can be helpful in diagnosing acalculuscholecystitis, perforated viscus, acute appendicitis, mesenteric ischemia or other surgical emergencies inPatients who are critically ill and have an equivocal abdominal exam.

Abdominal Trauma:

"Laparoscopy for specific problems (i.e., anterior and lateral stab wounds, tangential gunshot wounds) may be helpful in avoiding a full laparotomy. Laparoscopy for blunt abdominal trauma is currently debated."

Miscellaneous Conditions:

Other indications where laparoscopy may be helpful include a palpable abdominal mass, abdominal or pelvic pain of unknown origin, acute and chronic abdominal pain in the elderly patient, fever of unknown origin, and in patients with suspected congenital abnormalities.

CONTRA-INDICATIONS

Patients who are unfit for laparoscopic surgery are:-

1. Haemodynamic instability,
2. Mechanical or paralytic ileus,
3. Uncorrected coagulopathy,
4. Generalized peritonitis,
5. Severe cardiopulmonary disease,
6. Abdominal wall infection,
7. Multiple previous abdominal procedures, and
   Late pregnancy.

“ADVANTAGES

Cosmetically better outcome, small incision, so smaller scar.

Smaller incision leads to less damage and less tissue stretching leading to less postoperative pain.

Retraction is provided by low-pressure pneumoperitoneum giving a diffuse force applied gently and evenly over the whole abdominal wall causing minimal trauma and less damage of serosal covering. So there are less chances of postoperative adhesions.

Better visualization of paracolic gutters and pelvic cavity which is not possible by diagnostic laparotomy.

DISADVANTAGES

As compared to USG, CT and MRI, diagnostic laparoscopy is an invasive procedure, so there are more chances of complications.

Instruments of diagnostic laparoscopy are longer and more complex to use than in open surgery and a significant hand-eye co-ordination problem may occur in trainees.

In case of intra-operative arterial bleeding, haemostasis is difficult to achieve and so conversion to open surgery may be needed.

COMPLICATIONS

“Laparoscopy is associated with unique risks and complications that do not exist with open surgery. The most important of these complications are major vascular injuries, intestinal injuries, and CO_2 embolism, any one of which is potentially lethal. Diagnostic Laparoscopy has been shown to be a safe procedure with a complication rate of 0.15-3.0% and a mortality of 0.05%. The most dangerous part of the procedure is the introduction of the veress needle or the first trocar. The introduction of the first trocar by an open method increases the safety of the procedure especially in patients with adhesions. A randomized trial demonstrated thatAn open technique can be performed safely without being more time consuming than the closed technique.The incidence of major vascular injuries during laparoscopy is extremely low (0.001-0.005%) but they constitute the single most common (15%) cause of mortality from the procedure. In a recent review, the incidence of bowel perforation due to laparoscopic surgery was reported to be 0.22% with a mortality of 3.6% if recognized and treated during the procedure. If missed and recognized later mortality is higher.Of the late complications, port site metastases have been discussed extensively. The incidence of this complication ranges between 0.8-2% but it occurs mostly in patients with advanced disease, generally with peritoneal metastases. Careful tissue handling and protection of the port sites for the delivery of tissue specimens and letting out gas through the port, rather than removing the cannula allowing gush of gas with malignant cells spraying on the wound, may avoid this complication. Injury to adjacent organs

Bleeding from solid organs (liver and spleen)

Vascular injuries

Puncture/perforation/cauterization of the bowel

Transection/perforation of bile ducts

Perforation of the bladder

Puncture/perforation of the uterus

Complications of abdominal access

Port site hernia

Wound infection

Complications of specimen removal

Port site recurrence of cancer

Splenosis

Endometriosis

Complications of the pneumoperitoneum

Pneumothorax

Pneumomediastinum

Gas embolus

Subcutaneous emphysema

Most insertion-related vascular complications involve the aorta, inferior vena cava, iliac artery and vein, or mesenteric vessels. Injuries incurred with the Verress needle sometimes can be managed conservatively if the patient is stable and the site of injury is inspected carefully after laparoscopic access to the peritoneal cavity has been gained. Trocar injuries to major intra-abdominal vessels always must be treated by open laparotomy. Exclusion of such injuries should be the first priority of the laparoscopist following insertion of the initial trocar and video telescope. Major vascular injury always should be suspected in any patient who experiences sudden hemodynamic collapse during a laparoscopic procedure.

In such cases, one should discontinue gas insufflation immediately and quickly lower CO_2 pressure to 8mmHg, because of the possibility of a CO_2 embolism. The endoscope should not be removed, but a rapid scan of the abdomen and retro peritoneum should be carried out with the video telescope to search for haemorrhage. If retroperitoneal blood or retroperitoneal hematoma is present, an exploratory laparotomy should be performed immediately and the bleeding site compressed until the patient has been stabilized. Delay in performing laparotomy on

The patient with a major vascular injury only increases the risk of exsanguination and death. Sudden hemodynamic collapse of the patient undergoing laparoscopy may also result from CO_2 embolism, tension pneumothorax, or cardiac dysrhythmias.

Injuries to the gastrointestinal tract may be incurred at any point during the laparoscopic surgical procedure. The management of intestinal injuries from laparoscopy depends on the extent of the injury. Suspected injuries due to the Verress needle first should be inspected carefully with a laparoscope after gaining access at an alternative site; treatment may consist of either observation or laparoscopic suturing of the injury. If intestinal laceration occurs with the trocar, the trocar should be left in place while an open laparotomy is performed. Management of trocar injuries to the bowel with laparoscopic techniques may be possible in carefully selected cases. Gastrointestinal injuries also may occur from electro cautery and laser burns or from lacerations by laparoscopic instruments. If unrecognized, such injuries may result in delayed perforation with peritonitis, sepsis, and death.

The risk of bladder injury during trocar insertion should be minimal if the bladder has been decompressed with a Foley catheter. Lacerations to solid organs (liver, spleen) may occur from laparoscopic instruments or when an upper abdominal alternative insertion site is used. Abdominal wall complications that may occur owing to trocar injuries include bleeding, hematomas, and hernias. Injury to abdominal wall vessels (e.g. inferior epigastric artery) usually can be avoided by Trans illuminating the abdominal wall with a laparoscope before placing the trocar. Inspection of all trocar sites at the completion of the laparoscopic procedure should be performed

Routinely to avoid unrecognizedbleeding from the sites. Hernias that

Develop postoperatively through a laparoscopic port site have a high incidence of incarceration and Richter hernia formation because of the small size of the fascialDefect. Closure of the fascia at all port sites 5mm or greater in diameter is recommended to avoid this complication.A number of complications may develop as a result of CO_2pneumoperitoneum. These include CO_2 embolism, hypercarbia, subcutaneous emphysema and rarely, pneumomediastinum and pneumothorax. Improper placement of the Verress needle may also result in insufflations of the preperitoneal space or CO_2 emphysema involving the omentum, intestinal mesentery and retroperitoneum. Hypercarbia and the accompanying acidosis usually can be managed by increasing minute ventilation and lowering the CO_2 insufflation pressure. Subcutaneous emphysema may exacerbate the degree of hypercarbia, but it is otherwise of no consequence clinically and usually resolves within 24 to 48 hours of surgery. Cardiac complications of pneumoperitoneum include transient dysrhythmias and bradycardia from increased vagal stimulation."

PROCEDURE

Diagnostic laparoscopy in the patients presenting with acute abdominal pain is performed as below:

PATIENT POSITION

The patient is placed on the operating table with the legs straight.

The patient must be positioned properly at the beginning of the procedure, making certain that all pressure points are padded.

The operating table is tilted head up or down by approximately degree depending on the main area of examination.

Compression bandage may be used on legs during the operation to prevent thromboembolism.

The surgeon stands on the left side of the patient.

The first assistant, whose main task is to position the video camera, is also on the patient's left side.

The instrument trolley is placed on the patients left allowing the scrub nurse to assist the placing of appropriate instruments in the operating ports.

Television monitors are positioned on either side of the top end of the operating table at a suitable height; so surgeon, anaesthetist, as well as assistant can see the procedure.

ANAESTHESIA:

Local anaesthesia can be injected into the skin of the abdominal wall to completely numb the area and allow safe placement of the laparoscope. A small dose of IV sedation is also given.

General anaesthesia is of choice, as we can even do therapeutic management after doing diagnosis.

Prophylactic antibiotics are generally not indicated in diagnostic laparoscopy but in tropical countries like India it is advisable to use prophylactic antibiotics.

CREATION OF PNEUMOPERITONEUM:

CLOSED TECHNIQUES WITH VERESS NEEDLE:

The subcutaneous tissue is bluntly dissected until the umbilical fascia is palpable. The abdominal wall inferior to the umbilicus then is lifted with one hand while the Verses needle is inserted through the fascia at the base of the umbilicus at toward the pelvis so as to prevent injury to aorta and IVC. Two clicks of the Verses needle will be

Appreciated as it penetrates first the fascia and then peritoneum. Intraperitoneal placement is confirmed by-

Free movement of the needle.

Saline drop test: The needle is filled with saline and fluid is sucked into the peritoneal cavity by the negative pressure created inside.

Aspiration with no return of blood or bowel contents.

Irrigation with free flow of fluid.

Zero or negative pressure on CO_2 insufflator display.

The needle is now attached to the insufflator which delivers the CO_2 at a rate of 1l/min. initially. The pressure is maintained at 10- 12mm of Hg; 2-3l of gas is usually required for an average adult to establish

pneumoperitoneum upon which the abdomen distends symmetrically and becomes tympanic and liver dullness obliterated. The needle is removed and replaced by a 10mm trocar and cannula grasped in the palm of one hand and inserted using gentle, firm pressure while elevating the abdominal wall with the other hand and aiming at the sacral hollow. Once inside, the trocar is removed, the cannula is advanced for a short distance and the telescope is inserted, to which insufflator and light source are attached.

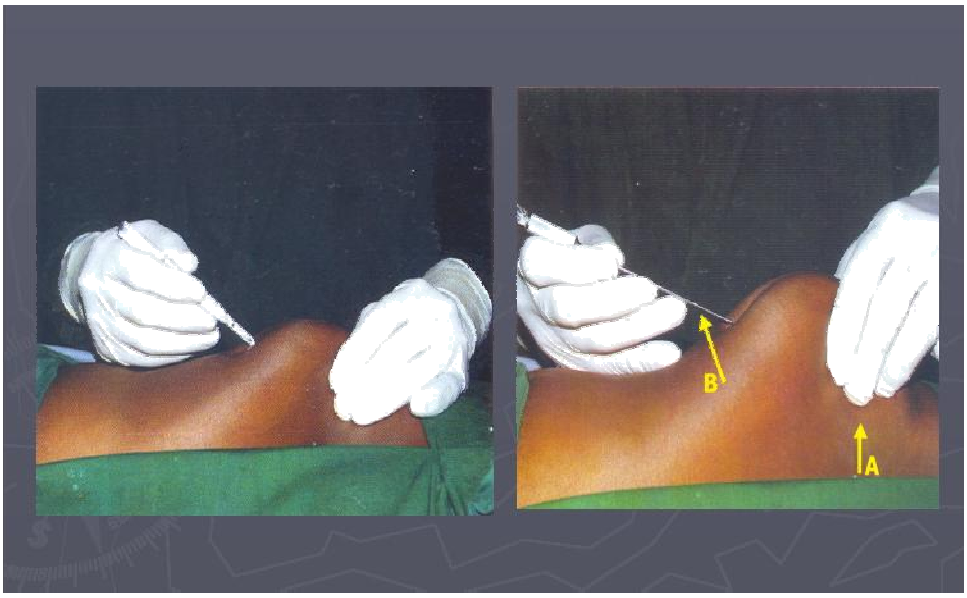


Figure closedverress needle technique of umbilical puncture.

OPEN TECHNIQUE WITH HASSON CANNULA:

The fascia and peritoneum are incised under direct vision. Once the peritoneum is opened, the placement of the Hasson cannula requires taking the simple sutures in either side of the fascia. The cannula tip is inserted through the opening and the sutures are pulled up tightly around the wings of the cannula.

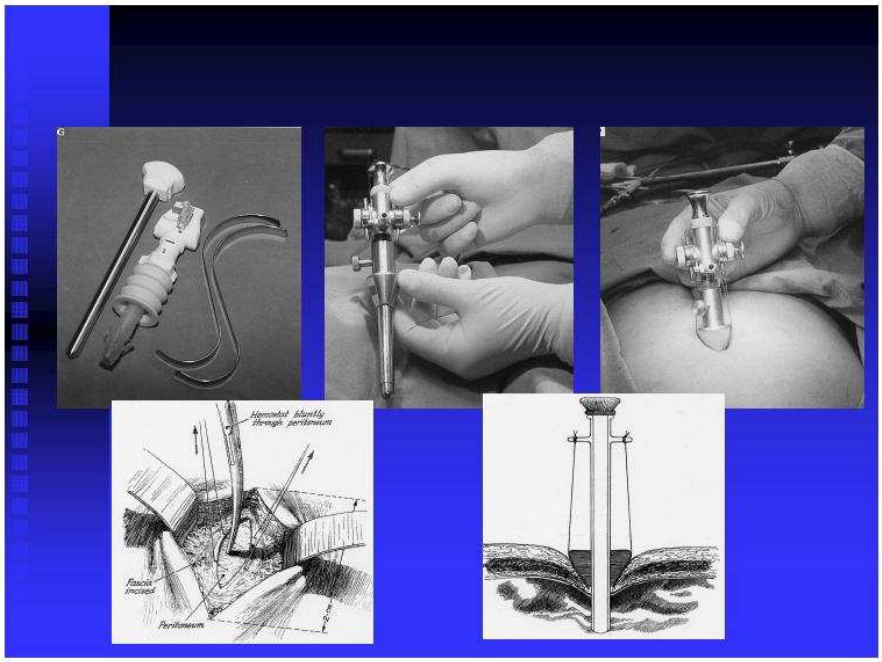


Fig. Open technique with Hasson cannula.

In small children and infants the umbilicus must be avoided because accompanying umbilical abnormalities may be expected in a large percentage of cases. Verress needle and first trocar are placed in the suprapubic area lateral to the rectus muscle on the left side. This point is called "Point of Munro".

Then, according to requirement, accessory ports are placed. The open technique for trochar insertion is recommended if a patient presents with severe abdominal distention. Nitrous oxide is used if diagnostic laparoscopy is performed in local anaesthesia because nitrous oxide has its own analgesic effect. Carbon dioxide is the preferred gas if the procedure is performed under general anaesthesia. Insufflation should be very slow and with care taken not to exceed 12mm of Hg.

PORT LOCATION:

Generally, one optical port at the umbilicus and one 5mm port in the left iliac fossa are required. A three-port approach should be used if there is any difficulty in manipulation.

- 10mm: umbilical (optical)
- 5mm: suprapubic
- 5mm: right hypochondrium

A 30-degree telescope is employed in most instances, as this facilitates easier inspection of peritoneal cavity and abdominal organs. The secondary ports are inserted under laparoscopic vision. The selected site on the abdominal wall is identified by finger identification of parietal peritoneum.

The usual site of insertion of the trochar cannula for diagnostic laparoscopy is below or to the side of the umbilicus. This position may require to be altered in the presence of abdominal scars. The use of a 30-degree forward oblique telescope is preferable for viewing the surface architecture of organs. By rotation of the telescope,

Different angles of inspection can be achieved.

The first important step after access to the abdomen has been gained, is to check for damage caused by trochar insertion. A second 5mm port may then be inserted under vision in an appropriate quadrant to take a palpating rod.

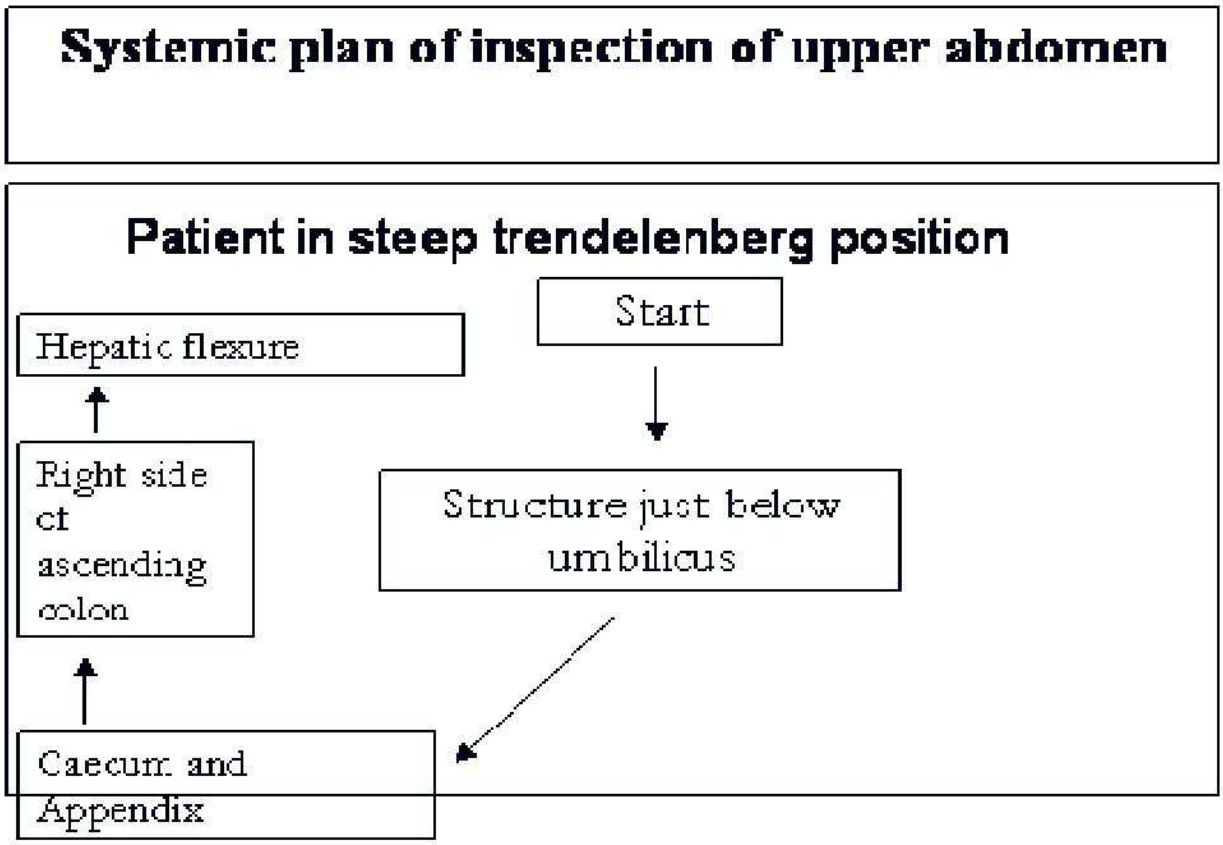


Table 4: SYSTEMIC PLAN OF INSPECTION OF UPPER ABDOMEN

Patient in steep Trendelenburg position.

Systemic plan of inspection in mid abdomen

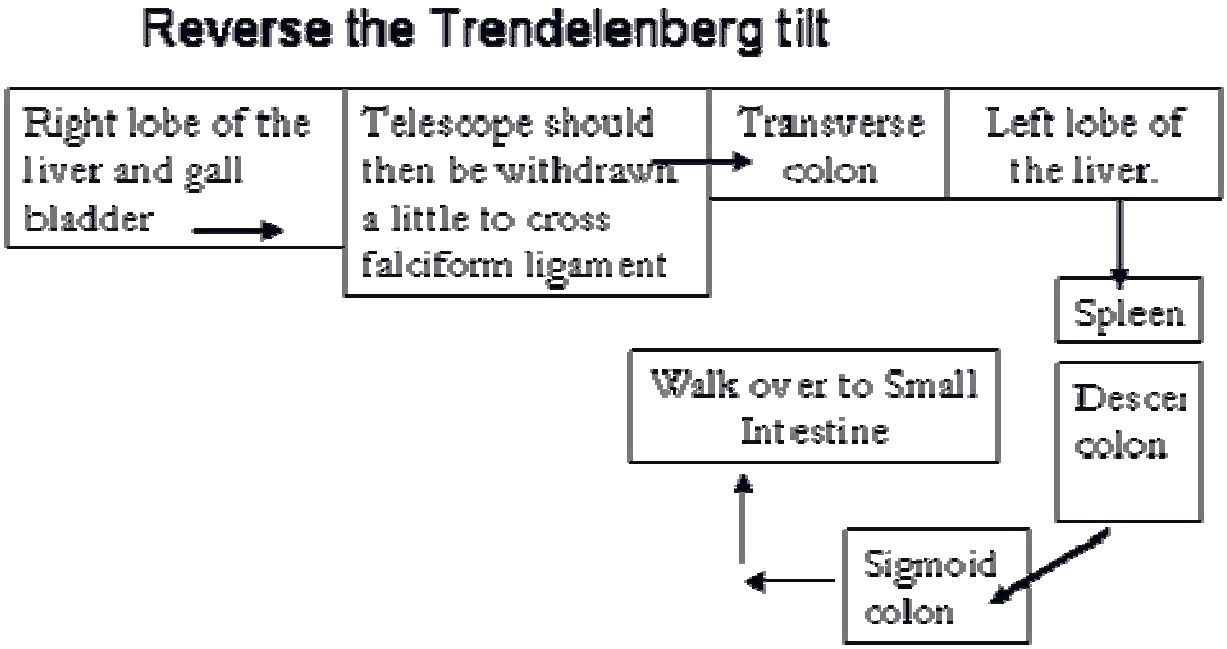


Table 5: SYSTEMIC PLAN OF INSPECTION IN MID ABDOMEN:

Reverse the Trendelenburg tilt.

INSPECTION OF PELVIS

Patient should again be positioned in steep Trendelenburg position.

The full length of the fallopian tube

Round ligament

Anterior cul de sac

Uterus

Inspection of Pelvis

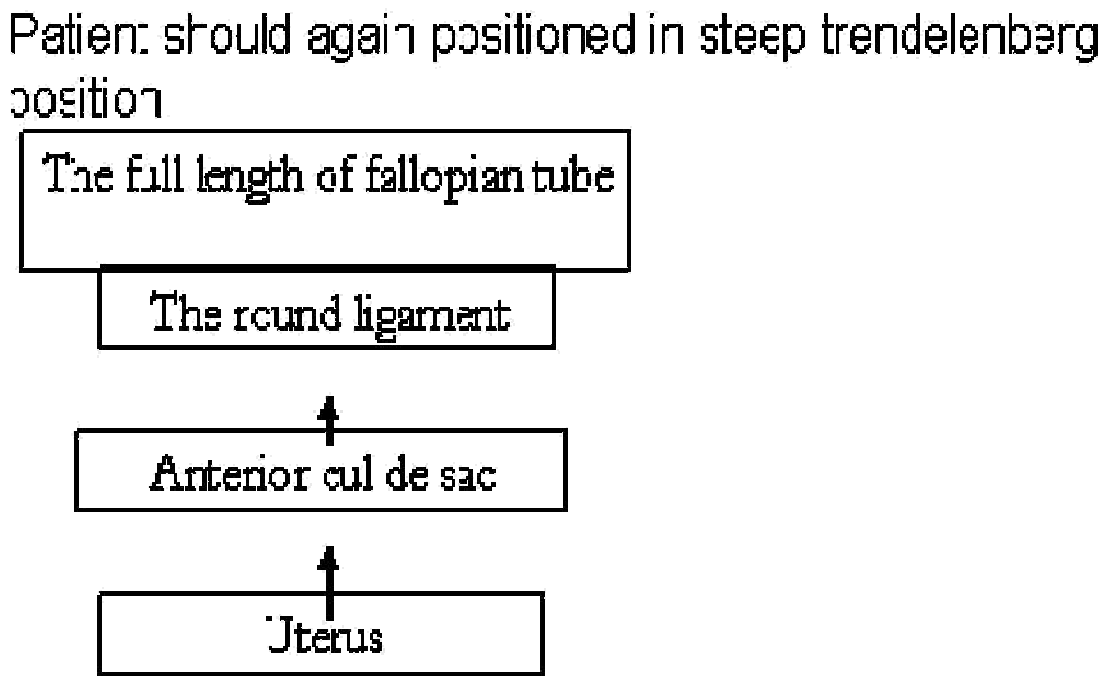


FIG. INSPECTION OF PELVIS

A systemic examination of the abdomen must then be performed as in laparotomy. One should be conversant with use of position and manipulation to aid vision. This is the first procedure to be mastered when learning laparoscopic surgery.

During diagnostic laparoscopy:

The abdominal cavity is inspected for fluids.

A sample is taken if free fluid is present for laboratory tests (chemistry, bacteriology).

Peritoneal lavage and adhesiolysis may need to be performed to improve visualization of organs.

MATERIALS AND METHODS

STUDY DESIGN

Prospective descriptive study

SOURCE OF DATA

- Patients admitted with abdominal pain at STANLEY MEDICAL COLLEGE HOSPITAL from JUNE2018 TO JULY 2019

INCLUSION CRIETRIA

Patients with history of abdominal pain, if physical examination and

Diagnostic tests are unrevealing.

EXCLUSION CRIETRIA

1. Age less than 18 years
2. Pregnant women
3. Medically unfit for surgery

Methodology

- All patients aged 18 and above who underwent diagnostic laparoscopy for abdominal causes, admitted in STANLEY MEDICAL COLLEGE Hospital, over a period betweenJUNE2018 TO JULY 2019were included in this study.

All the relevant data concerning patient's diagnoses and treatment such as history, operative notes, blood investigations, X-ray studies etc. were procured from the patient's in-patient charts and entered into the Proforma for the study.

We performed diagnostic laparoscopy electively as follows-Pre-anaestheticcheck-up was done in each case.

1. Anaesthesia : GA
2. Position: Supine position. Depending on area of examination right and left tilts, head up and head low positions are given.
3. Port placement : closed technique
4. Port locations: The two ports technique was used routinely employing 10 mm sub-umbilical port for telescope and 5mm port for probing, diathermy and

   Biopsy in the relevant abdominal quadrant.an additional 5mm port was inserted only if necessary.
5. Pneumoperitoneum created using CO2 (Carbon Di-oxide). Pressures set at 12 mm Hg.
6. A 30-degree telescope is employed in most instances, as this facilitates easier inspection of peritoneal cavity and abdominal organs. The secondary ports are inserted under laparoscopic vision. The selected site on the abdominal wall is identified by finger identification of parietal peritoneum.
7. A systemic examination of the abdomen was then performed as in laparotomy. We begin at the left lobe of the liver but any scheme can be used as long as it is consistent. Next, check around the falciform ligament to the right lobe of liver, gallbladder and hiatus. After checking the stomach, move on

   the caecum and appendix and check the terminal ileum, follow the

   colon round the sigmoid colon, and then check the pelvis.

Impact of diagnostic laparoscopy on management:

Biopsy of pathologic lesions like tubercles, peritoneum, liver, lymph nodes done according to need.

If a pathologic finding needs surgical intervention (e.g. acute appendicitis) then it was done laparoscopically (laparoscopic appendicectomy).

If laparoscopic management was not possible due to any reason, converted to laparotomy.

If no pathology is to be treated with surgical intervention, then the diagnostic laparoscopy was completed, instrument and gas removed and port site closed with Vicryl. Biopsy reports were followed up.

Patient's requiring medical line of treatment, like Koch's abdomen, were started on treatment. The impact of the procedure was considered positive if the laparoscopy revealed a pathology which may be responsible for the patient's symptoms, or when the suspected pathology was excluded. At the end of the study, the Data so collected on a Proforma were tabulated and analysed.

RESULT & ANALYSIS

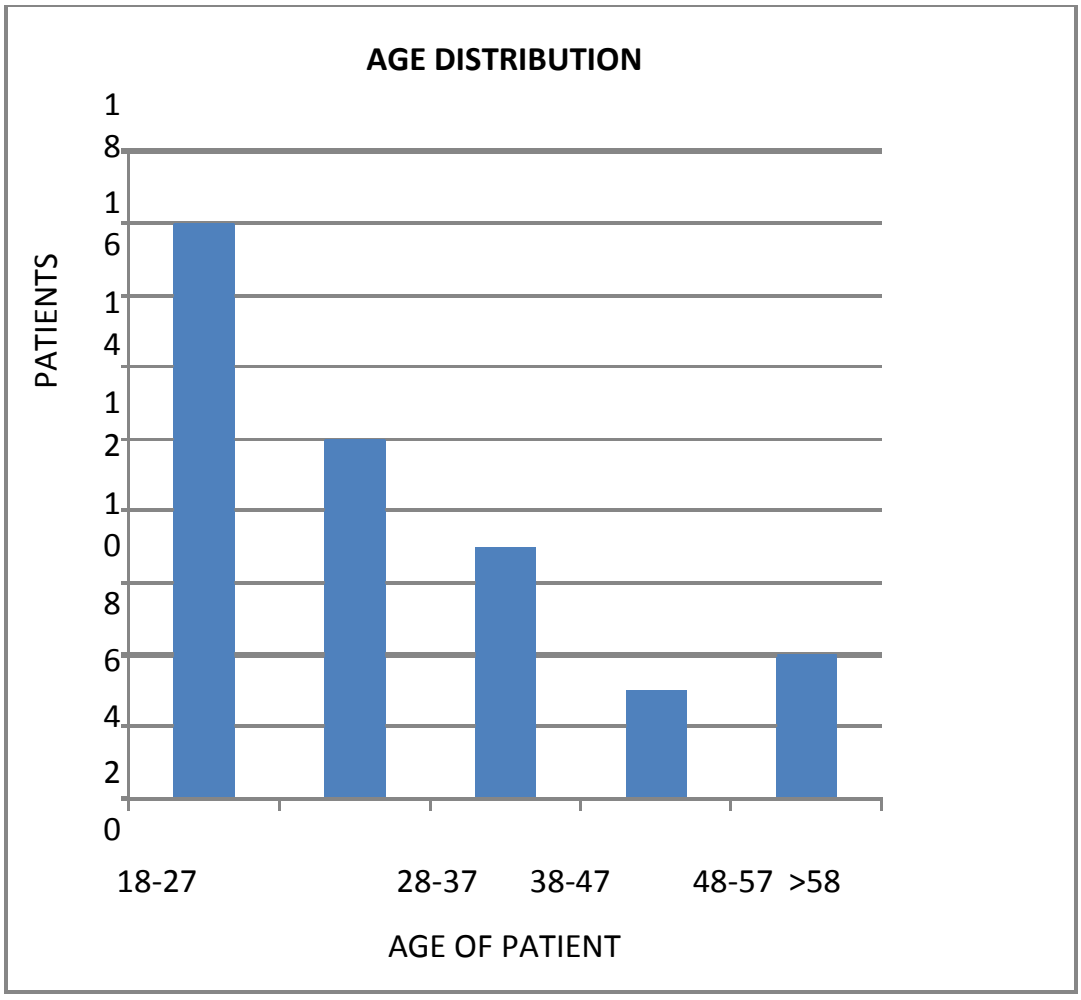
- This study "Evaluate the role of Diagnostic Laparoscopy in nonspecific abdomen pain" is performed at STANLEY MEDICAL COLLEGE HOSPITAL, CHENNAI on patients admitted in surgery ward between JUNE2018 TO JULY 2019.

  Diagnostic Laparoscopy was performed in 40 patients with surgical dilemmas & following are the results.

TABLE NO 1 (AGE DISTRIBUTION)

AGE	NO OF PATIENTS	PERCENTAGE
18-27	16	40
28-37	10	25
38-47	7	17.5
48-57	3	7.5
>58	4	10
TOTAL	40	100

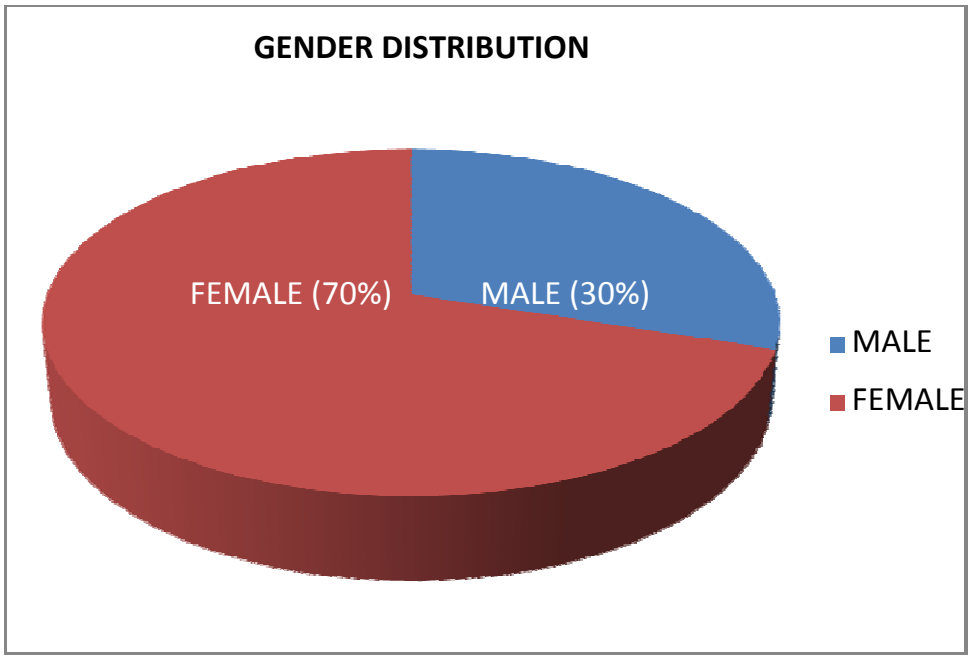
In this study, the youngest patient was of 18 years and the oldest patient was of 64 years. The mean age group was 35 years. The maximum no of patients (40%) were in the age group of 18 to 27.



GRAPH NO 1 : AGE DISTRIBUTION

TABLE NO 2 (GENDER DISTRIBUTION)

SEX	NO OF PATIENTS	PERCENTAGE
MALE	12	30
FEMALE	28	70
TOTAL	40	100

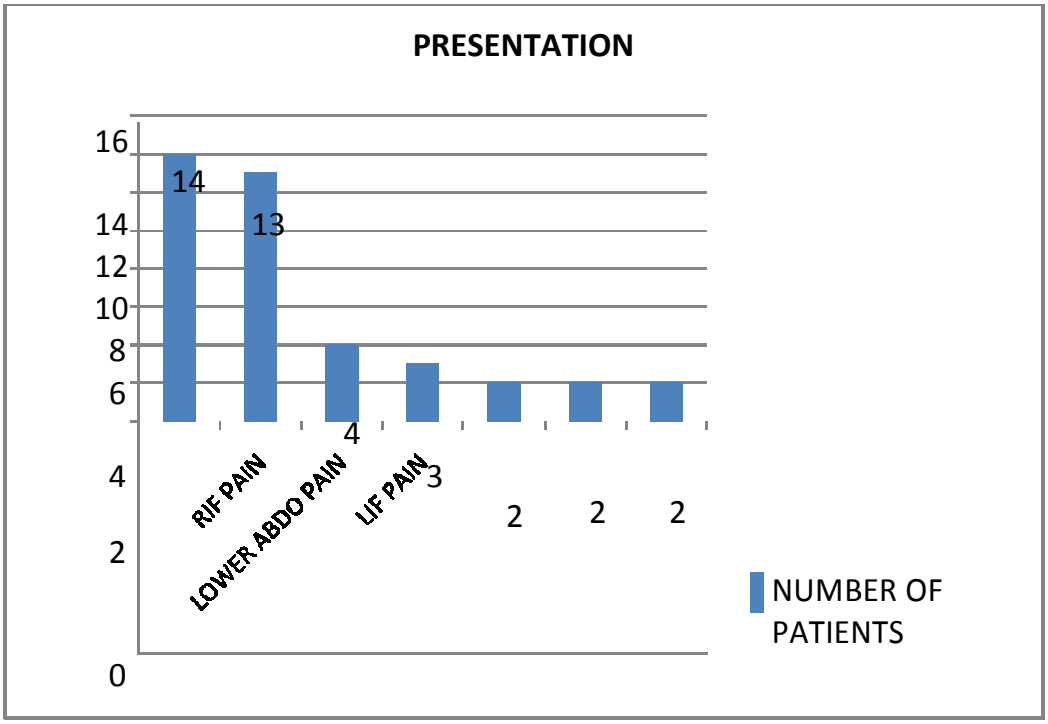


GRAPH NO 2: GENDER DISTRIBUTION

In this study most of the patients 70% were females as compared to males (30%)

TABLE NO 3(DISTRUBUTION OF STUDY POPULATION ACCORDING TO PRESENTATION)

PRESENTATION	NUMBER OF PATIENTS
DIFFUSE ABDO PAIN	14
RIF PAIN	13
LOWER ABDO PAIN	4
LIF PAIN	3
HYPOGASTRIC REGION PAIN	2
UPPER ABDO PAIN	2
UMBILICAL REGION PAIN	2

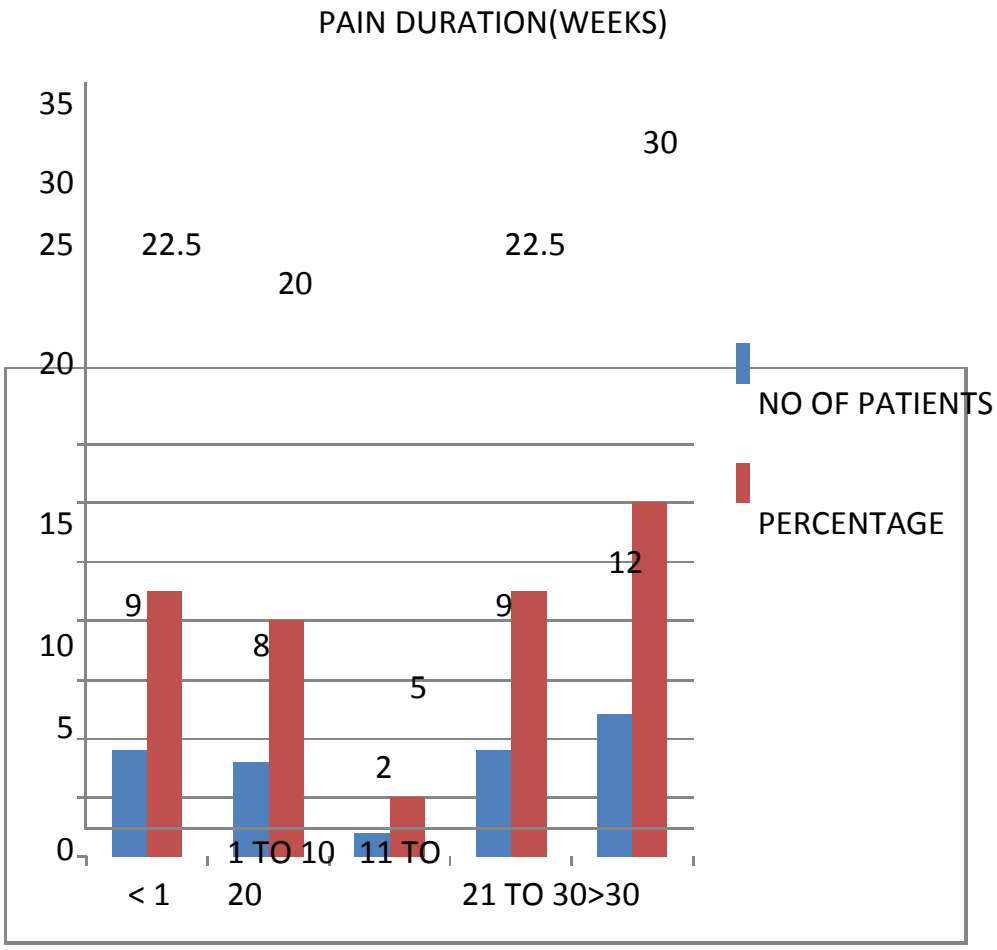


GRAPH NO 3: DISTRUBUTION OF STUDY POPULATION ACCORDING TO PRESENTATION

Out of 40 patients in this study ,maximum number of patients had diffuse abdominal pain(14 patients),13 had RIF pain,4 had lower abdominal pain,3 had LIF pain,2 had hypogastric region pain,2 had upper abdominal pain & 2 patients had umbilical region pain.

TABLE NO 4 (Distribution of patients according to duration of pain)

PAIN DURATION(WEEKS)	NO OF PATIENTS	PERCENTAGE
< 1	9	22.5
1 TO 10	8	20
11 TO 20	2	5
21 TO 30	9	22.5
>30	12	30



GRAPH NO 4: Distribution of patients according to duration of pain

In this study, Out of 40 patients 9 patients(22.5%) had pain duration less than 1 week, 1 to 10 weeks pain duration there was found in 8(20%) patients, 2 patients(5%) had pain duration of 11 to 20 weeks,

9 patients (22.5%) had pain between 21-30 weeks and 12 patients (30%) had pain duration of more than 30weeks

TABLE NO 5 (Comparison between USG findings & dl findings)

COMPARISION OF USG & DL FINDINGS	USG(NO OF PATIENTS)	DL(NO OF PATIENTS)
Normal	11	5
Appendicitis	6	4
Dilated bowel loop	5	6
Mesenteric lymphadenopathy	4	2
Free fluid collection	11	13
Appendicular mass	2	3
Bowel adhesions	1	7

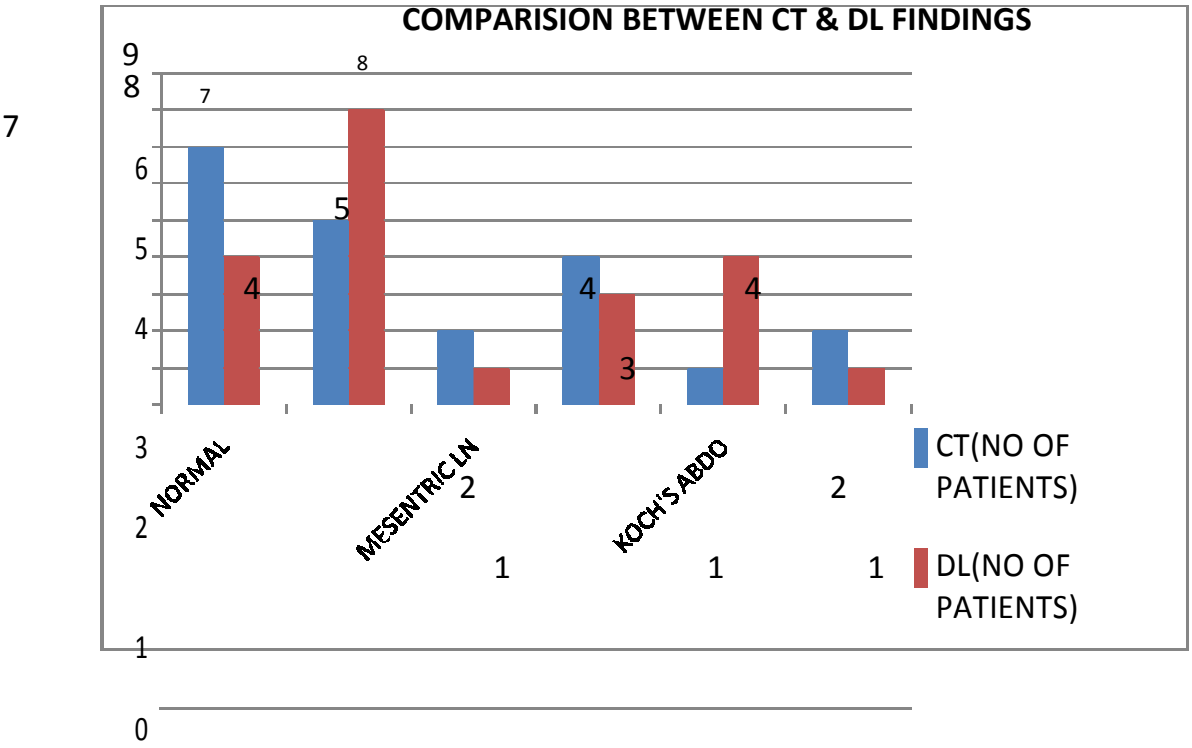
COMPARISION OF USG & DL FINDING

In this study, Out of 40 patients 11 patients had normal USG finding,7 had ascites,6 had appendicitis,5 had dilated bowel loop,4 had mesenteric lymphadenopathy,4 had free fluid collectin, 2 had appendicular mass,1 had bowel adhesions.so in most of the cases in spite of abdominal pain USG finding was normal & create dilemmas. On DL 5 patients had normal DL finding,4 had appendicitis,6 had dilated bowel loop,2 had mesenteric lymohadenopathy,13 had free fluid collection,3 had appendicular mass & 7 had bowel adhesions

.

TABLE NO 6 (comparison between CT & DL findings)

COMPARISION BETWEEN CT & DL FINDINGS	CT(NO OF PATIENTS)	DL(NO OF PATIENTS)
NORMAL	7	4
FREE FLUID IN ABDO	5	8
MESENTRIC LN	2	1
INFLAMMED APPENDIX	4	3
KOCH'S ABDO	1	4
INTESTINAL STRICTURE	2	1



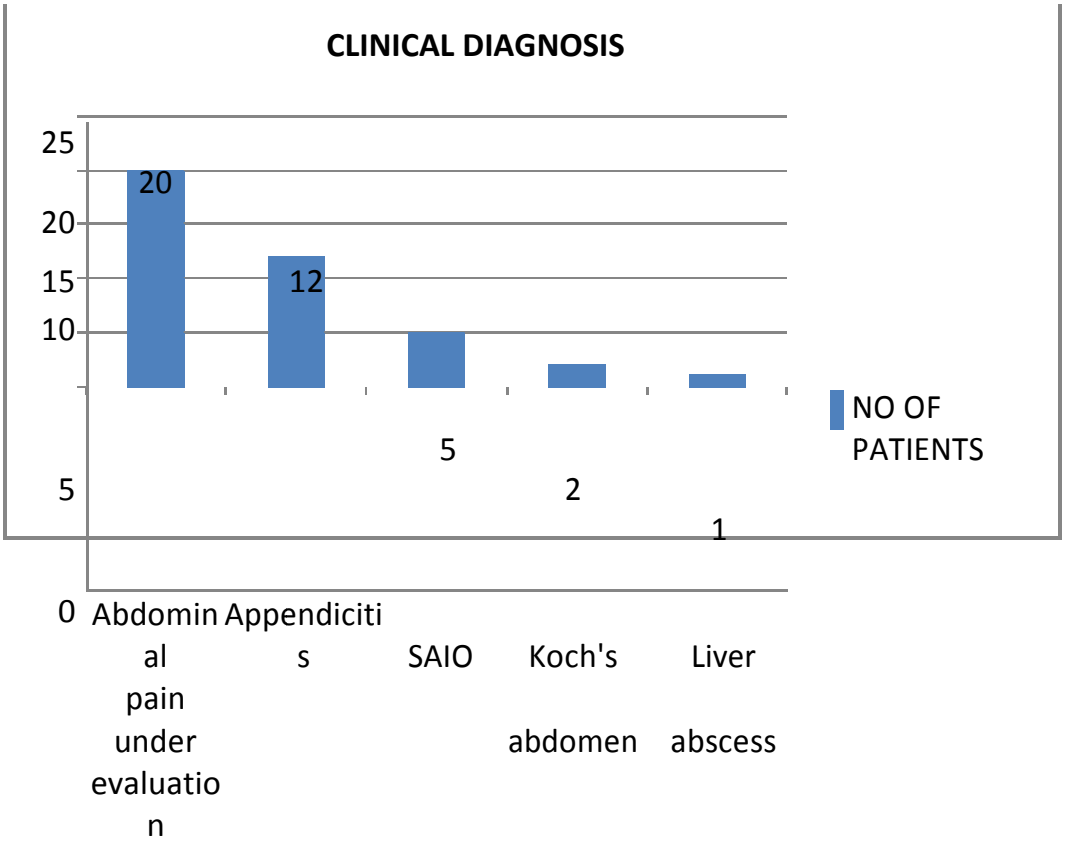
GRAPH NO 6: comparison between CT & DL findings

In our study CT scan was done in 21 patients. Out of 21 patients 7 patients had normal CT finding,3 had free fluid in abdomen,2 had ascites with thickened peritoneum,2 had mesenteric LN enlargement,4 had inflamed appendix,1 had Koch's abdomen & 2 had intestinal stricture. On DL among them 4 had normal Dl finding,8 had free fluid in abdomen, 1 had mesenteric lymphadenopathy,3 had inflamed appendix,4 hadKoch's abdomen,1 had intestinal stricture

.

TABLE NO 7 (Distribution according to clinical diagnosis)

CLINICAL DIAGNOSIS	NO OF PATIENTS
Abdominal pain under evaluation	20
Appendicitis	12
SAIO	5
Koch's abdomen	2
Liver abscess	1



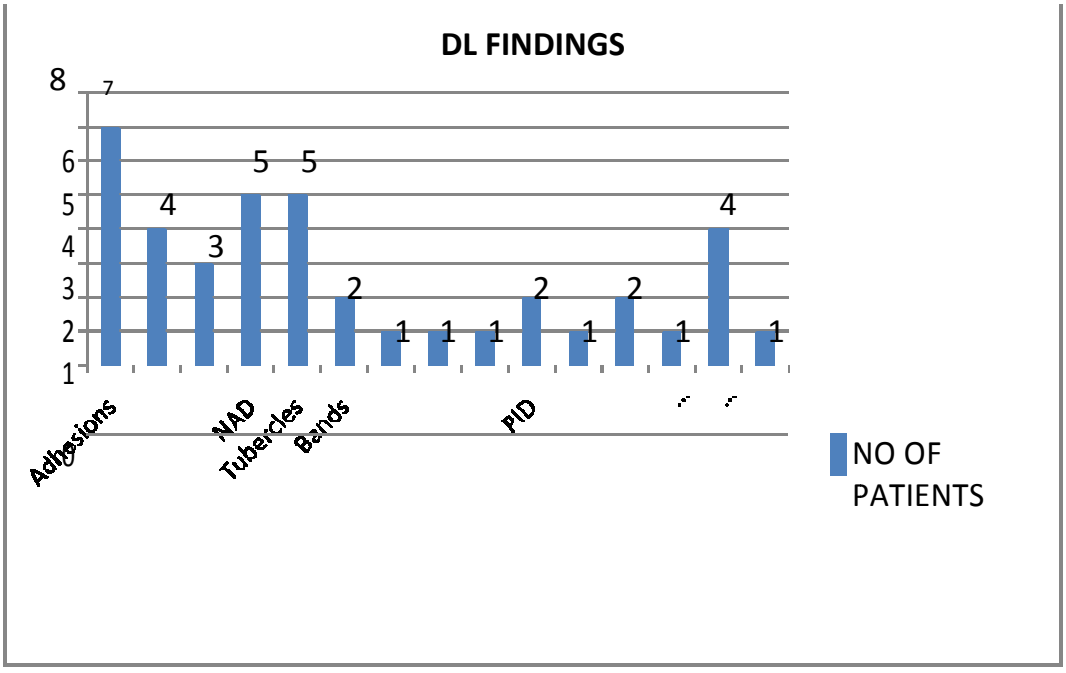
GRAPH NO 7: Distribution according to clinical diagnosis

In this study of 40 patients, among 20 patients no specific clinical diagnosis could be made, in 12 patients appendicitis was suspected, in 5 SAIO was suspected, in 2 Koch’sabdomen was suspected and in 1 patient liver abscess was suspected clinically.

TABLE NO 8 (Distribution of patients according to DL findings)

DL FINDINGS	NO OF PATIENTS
Adhesions	7
Inflamed Appendix	4
Appendicular mass	3
NAD	5
Tubercles	5
Bands	2
chocolate cyst of ovary	1
Small bowel gangrene	1
Bowel stricture	1
PID	2
Ascites with appendicitis	1
Ascites with tubercles	2
Adhesions+appendicular mass+PUH	1
Large appendix without inflammation	4
Normal appendix	1

7

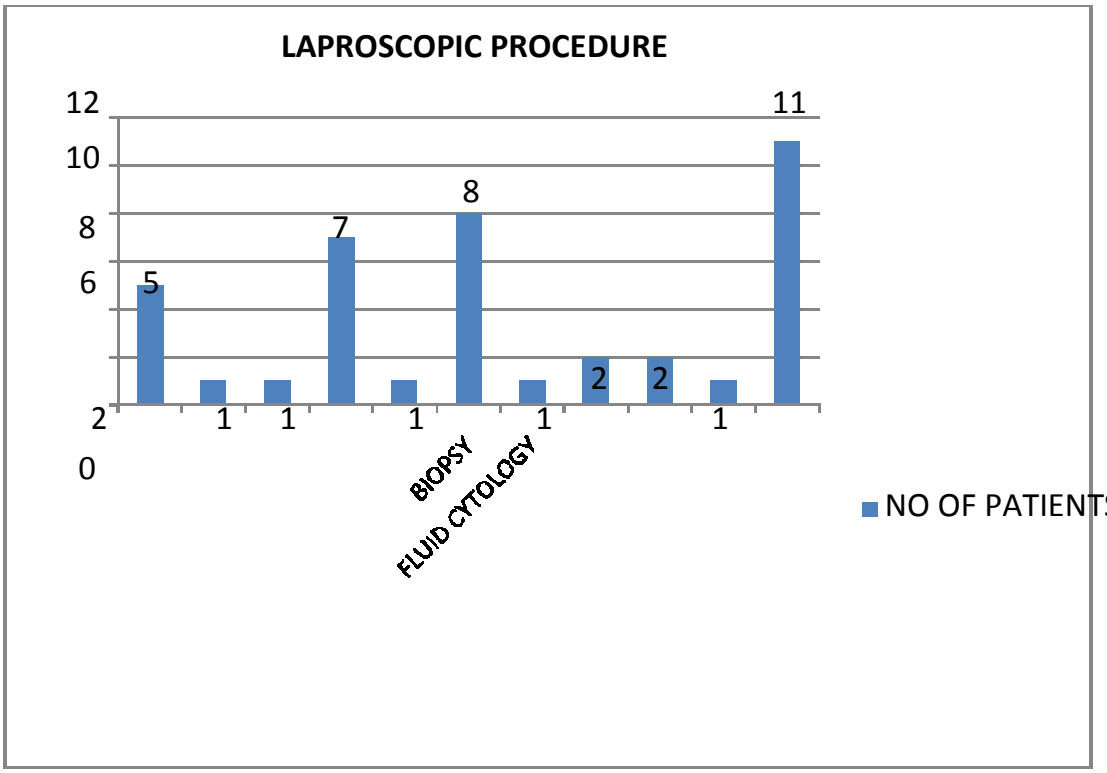


GRAPH NO 8: Distribution of patients according to DL findings

In our study among 40 patients,7 had adhesions,4 had inflamed appendix,3 had appendicular mass,5 had tubercles,2 had bands,1 had chocolate cyst of ovary,1 had small bowel gangrene,1 had ileal stricture,2 had PID,1 had ascites with appendicitis,2 had ascites with tubercles,1 had adhesions with appendicular mass and PUH,4 had Large appendix without inflammation,1 had normal appendix and 5 patients had no abnormal findings.so most of the patients had adhesions followed by Koch’s tubercles

TABLE NO 9 (Laparoscopic Procedures performed)

LAPROSCOPIC PROCEDURE	NO OF PATIENTS
ADHESINOLYSIS	5
ADHESINOLYSIS+BIOPSY	1
ADHESINOLYSIS+APPENDICECTOMY	1
APPENDICECTOMY	7
APPENDICECTOMY+FLUID CYTOLOGY	1
BIOPSY	8
FLUID CYTOLOGY	1
CONVERT TO OPEN	2
RELEASING OF BANDS	2
STRICTUROPLASTY	1
NO INTERVENTION	11

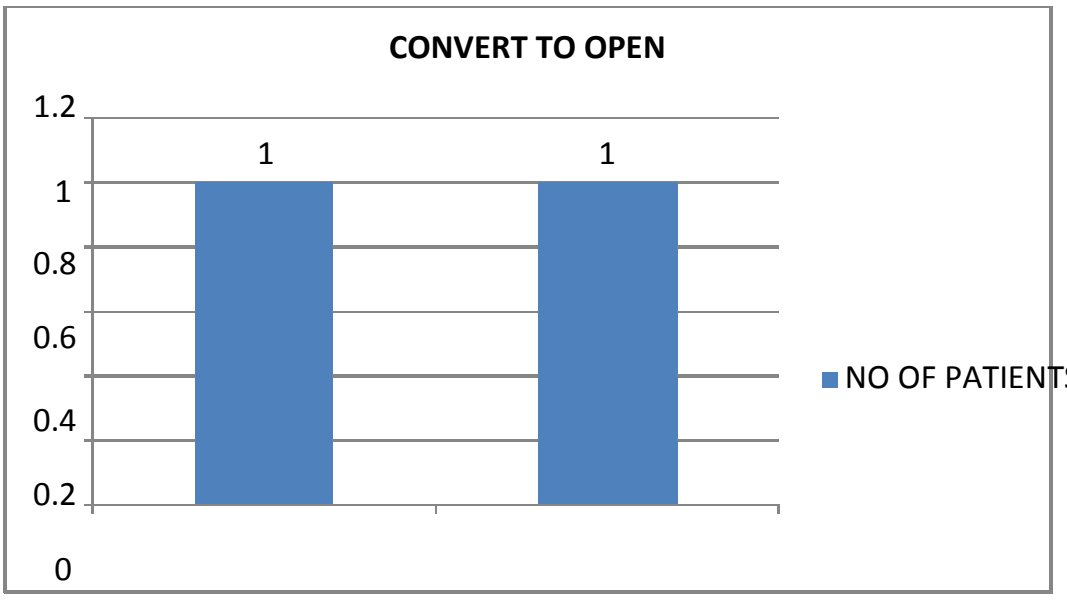


GRAPH NO 9: Laparoscopic Procedures performed

Laparoscopic adhesinolysis were performed in 5 patients. In 1 patient adhesinolysis with biopsy of tubercles over the peritoneum done.In 1 patient adhesinolysis with appendicectomy was performed. In 7 patients laproscopic appendicectomy were performed.In 1 patient laproscopic appendicectomy with aspiration of ascitic fluid performed & sent for cytology.In 8 patients only biopsy were taken & sent for histopathology examination.In 1 patient only abdominal fluid sent for cytological examination.In 2 patients relasing of intestinal bands performed.In 1 patient ilealstricturoplasty was performed.In 11 patients no intervention was done.

TABLE NO 10 (INDICATIONS FOR CONVERSION)

INDICATION OF CONVERSION	**NO OF PATIENTS**
EXCESSIVE ADHESIONS	1
SMALL BOWEL GANGRENE	1



GRAPH NO 10: INDICATIONS FOR CONVERSION

IN this study 2 patients had to be converted into open procedure following diagnostic lap procedure. 1 had excessive adhesions and the other patient had small bowel gangrene**.**

TABLE NO 11(Diagnosis made after Diagnostic Laparoscopy)

DIAGNOSIS	NO OF PATIENTS	PERCENTAGE
KOCH'S ABDO	6	15
ACUTE APPENDICITIS	6	15
CHRONIC APPENDICITIS	3	7.5
NORMAL APPENDIX	1	2.5
APPENDICULAR MASS	3	7.5
APPENDICULAR MASS+PUH	1	2.5
CHOCOLATE CYST OF OVARY	1	2.5
OBSTRUCTION DUE TO BANDS	2	5
ADHESIONS	5	12.5
METASTASIS	2	5
PID	3	7.5
INTESTINAL STRICTURE	1	2.5
BOWEL GANGRENE	1	2.5
NO DIFINATIVE DIAGNOSIS	5	12.5

Out of the 40 patients who underwent DL,6(15%) patients were diagnosed with Koch's abdo,6(15%) with acute appendicitis,3(7.5%) with chronic appendicitis,1(2.5%) with normal appendix,3(7.5%) with appendicular mass,1(2.5%) with appendicular mass + para umbilical hernia,1(2.5%) with chocolate cyst of ovary,2(5%) with intestinal obstruction due to bands,5(12.5%) with adhesions,2(5%) with metastasis malignancy,3(7.5%) with pid,1(2.5%) with ileal stricture,1(2.5%) with bowel gangrene. In 5(12.5%) patients we could not obtain any definitive diagnosis.

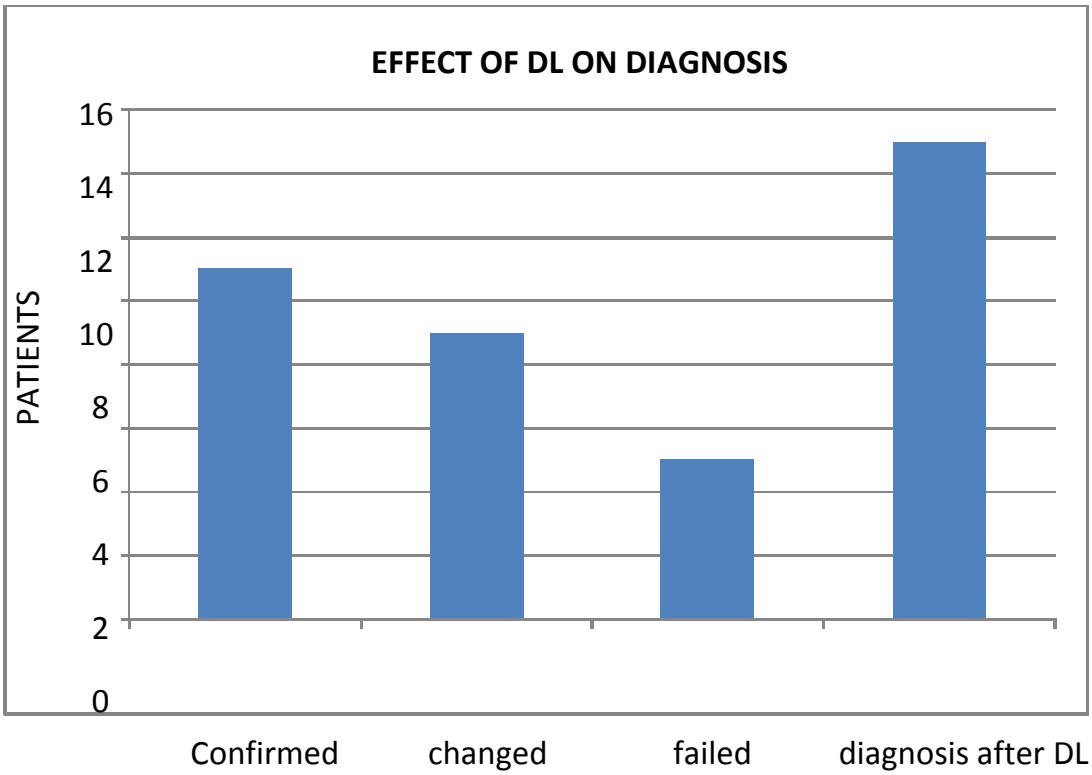
TABLE NO 12 (POST OPERATIVE COMPLICATION)

COMPLICATION	NO OF PATIENTS	PERCENTAGE
HAEMORRHAGE	1	2.5
WOUND INFECTION	1	2.5
TOTAL	2	5

One patient had bleeding from port site and another patient had wound infection.

TABLE NO 13(EFFECT OF DL ON DIAGNOSIS)

DIAGNOSIS STATUS	**NO OF PATIENTS**	PERCENTAGE
confirmed	11	27.5
changed	9	22.5
failed	5	12.5
diagnosis after DL	15	37.5
total	40	100



GRAPH NO 12(EFFECT OG DL ON DIAGNOSIS)

DL confirmed pre-operative diagnosis in 11(27.5%) cases whereas in 9(22.5%) cases the diagnosis had changed. 15(37.5%) cases were diagnosed after DL for whom no definitive pre-operative diagnosis was made. In 5(12.5%) cases no diagnosis could be made by DL.

DISCUSSION

This study **“ROLE OF DIAGNOSTIC LAPAROSCOPY IN NONSPECIFIC ABDOMINAL PAIN.”**is performed at STANLEY MEDICAL COLLEGE HOSPITAL, CHENNAI on patients admitted in surgery ward between JUNE2018 TO JULY 2019

Diagnostic Laparoscopy was performed in patients with surgical dilemmas & on the basis of its results we proceeded to further management, either conservative or surgical intervention.

AGE DISTRIBUTION

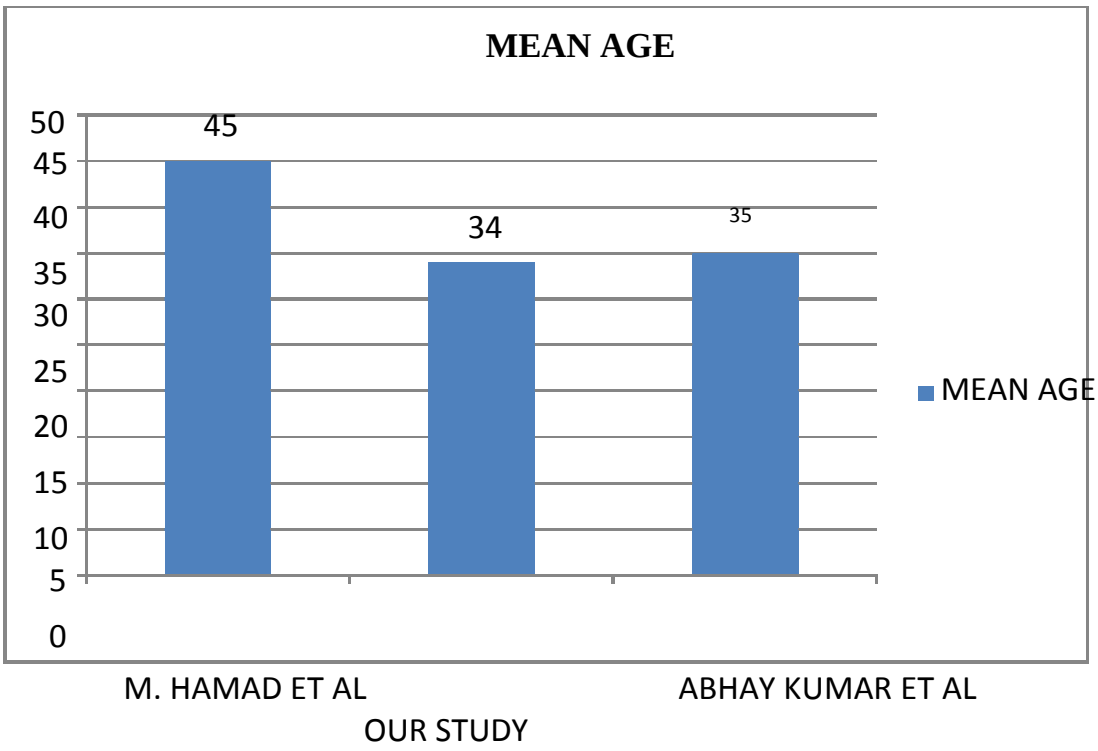
In this study we had patients of all age groups starting from 18 years to 64Years (mean 35 years). .40% of them were between 18 to 27 years. In our study youngest patient was

20 yrs. and oldest was 64 yrs. So we found that surgical dilemmas are more common in young age group. IN this study we had maximum number of patients in a younger age group, as appendicitis and Koch’s abdomen are more common in this age group it attributed to more no of patients in this study.In series by Mohammed Hamad Al-Akeely et al, 35 patients underwent elective diagnostic laparoscopy for chronic abdominal disorders. The age range was 14 to 90 years (mean 45 years).

In a series of diagnostic laparoscopy in non-specific abdominal pain by Abhaykumar et al mean age was 34 years.

TABLE NO 14 (MEAN AGE OF THE PATIENT IN COMPARISION TO OTHER STUDY)

STUDY	MEAN AGE
M. HAMAD ET AL	45
ABHAY KUMAR ET	
AL	34
OUR STUDY	35



GRAPH NO 13 :MEAN AGE OF THE PATIENT IN COMPARISION TO OTHER STUDY

GENDER DISTRIBUTION

Abdominal pain is one of the common causes of hospital admission. Whenever women present with an acute abdomen, diagnostic difficulties arise as to whether the emergency is surgical or gynaecological. Due to the nature of the female pelvic anatomy, the underlying aetiology includes a wide range of differential diagnoses.

As this study was in a rural setup where patients majority of them being females, being shy and ignorant of their gynaecological and other complaints, leading to pain in

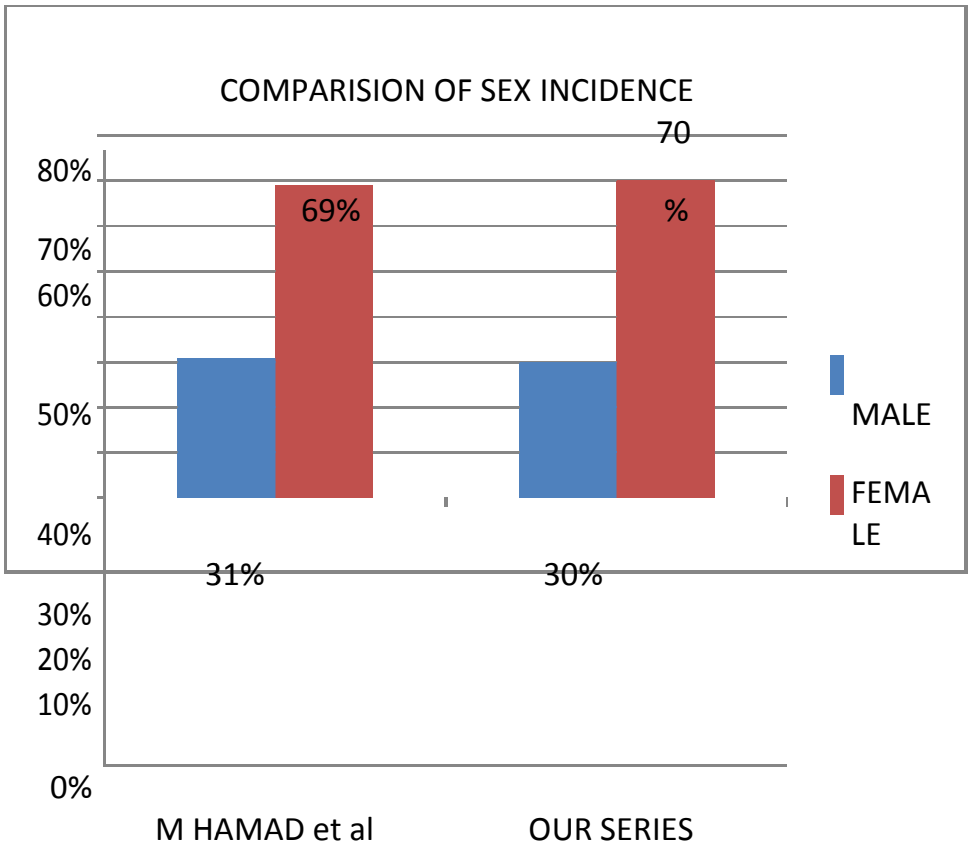
Abdomen and presenting to the hospital late after taking local treatment from the villages account for more number of females in this study

In our study we had 28 (70%) female and 12 (30%) male patients in our study. There were 11(31%) male and 24 (69%) female patients in a series by Mohammed Hamad Al-Akeely et al.

TABLE NO 15

Comparison of Gender distribution with other study

Gender	**Male**	**Female**
our series	30%	70%
M Hamad Al-Akeely et al	31%	69%



GRAPH NO 14: Comparison of Gender distribution with other study

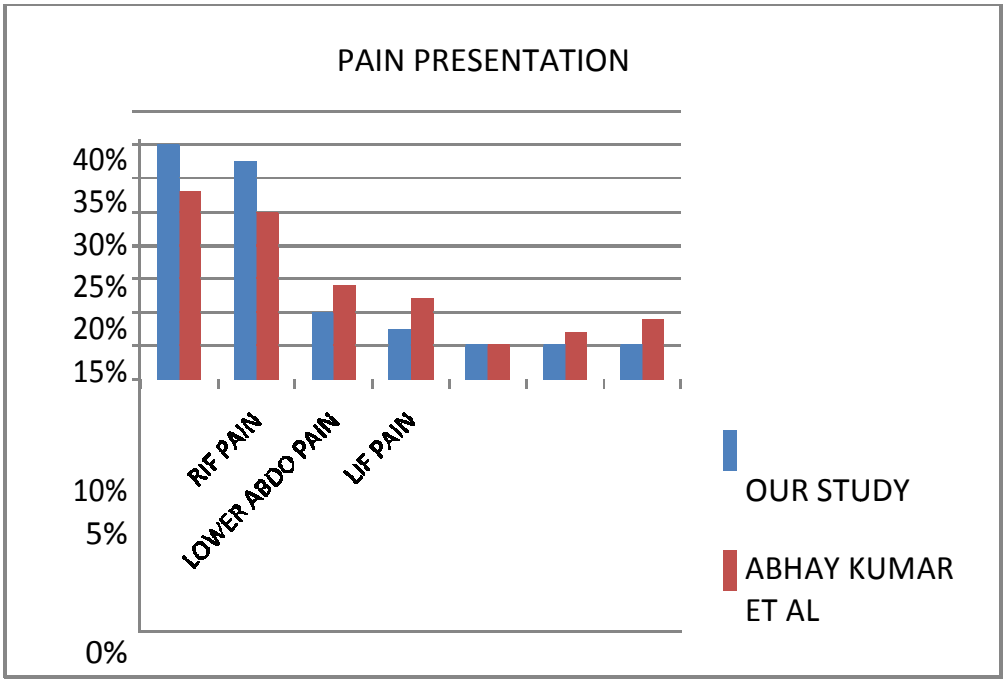
SITE OF ABDOMINAL PAIN

Pain in individual quadrant of the abdomen has its specific differential diagnosis. But diffuse abdominal pain are always difficult to diagnosed clinically or radio logically. In our series Out of 40 patients,14 patients had diffuse abdominal pain(35%),13 had RIF pain(32.50%),4 had lower abdominal pain(10%),3 had LIF pain(7.5%),2 had Hypo gastric region pain (5%),2 had upper abdominal pain(5%) & 2 patients had umbilical region pain(5%).so surgical dilemmas are more common in diffuse abdominal pain followed by RIF pain.This study was comparable to study conducted by Abhaykumar et al.Diffuse abdominal pain and RIF was found in most of the patients.Diffuse abdominal pain was found in 35% which was similar to study by kumar et al 28% 32.5% had pain in RIF in this study , while in study by Abhaykumar et al[20] it was 25 % In younger age group where appendicitis is more common attributed to more no of patients having pain in RIF.

TABLE NO 16

COMPARISION OF SITE OF PAIN WITH OTHER STUDY

PRESENTATION	OUR STUDY	ABHAY KUMAR ET AL
DIFFUSE ABDO PAIN	35%	28%
RIF PAIN	32.50%	25%
LOWER ABDO PAIN	10%	14%
LIF PAIN	7.50%	12%
HYPOGASTRIC REGION PAIN	5%	5%
UPPER ABDO PAIN	5%	7%
UMBILICAL REGION PAIN	5%	9%



GRAPH NO 15:

COMPARISION OF SITE OF PAIN WITH OTHER

STUDY PAIN DURATION

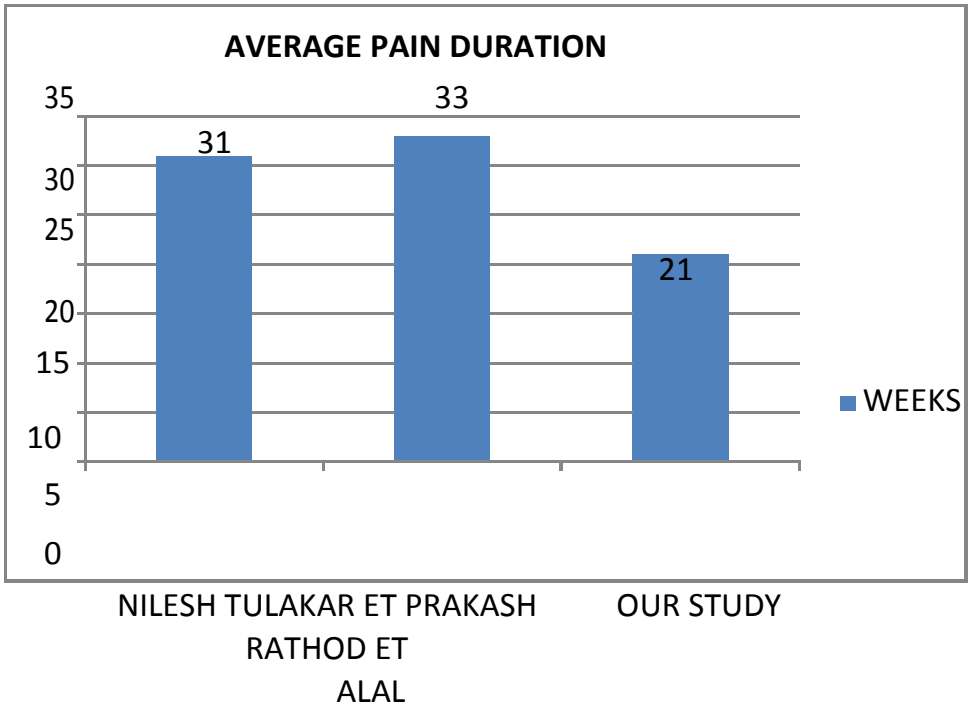
Chronic abdominal pain is a common disorder both in general practice and in hospitals. Although patients with this type of pain may have undergone numerous diagnostic workups, including surgery, their pain remains a challenge to all known diagnostic and treatment methods. After all, more than 40% of the patients presenting with chronic abdominal pain had no specific etiological diagnosis at the end of their diagnostic workup. Chronic abdominal pain is associated with poor quality of life and significant levels of depressive symptoms. Much is known about the prevalence, societal burden, and suffering associated with chronic abdominal pain. Many common organic and functional diseases can cause it.Chronic idiopathic pain syndromes are among the most challenging and demanding conditions to treat across the whole age spectrum. Potentially it can be unrewarding for both the patients and the medical team. Studies conducted with large

Community samples or hospital populations imply chronic abdominal pain is a pervasive problem.In our series Out of 40 patients 9 patients(22.5%) had pain duration of less than 1 week, in 1 to 10 weeks pain duration there were 8(20%) patients,2 patients(5%) in 11 to 20 weeks,9 patients(22.5%) in 21-30 weeks and most of the patients (12 patients,30%) had pain duration of more than 30 weeks. patients. Average pain duration of our study is 21 weeks. So surgical dilemmas are more common in chronic abdominal pain.

In a series by Prakash rathod et al to evaluate the role of diagnostic laparoscopy in chronic abdominal conditions average pain duration is 33 weeks. In a series by NlieshTulakar et al it is 31 weeks.

TABLE NO 17 (AVERAGE PAIN DURATION)

	WEEK
AVERAGE PAIN DURATION	**S**
NILESH TULAKAR ET AL	31
PRAKASH RATHOD ET AL	33
OUR STUDY	21



GRAPH NO 16: AVERAGE PAIN DURATION

USG FINDINGS

The limitations of US in abdominal disease are usually attributed to interfering intestinal gas load, to examiner dependency, to the obesity of the patient or to combinations of these three obstacles. In our study Out of 40 patients 11 patients had normal USG finding,7 had ascites,6 had appendicitis,5 had dilated bowel loop,4 had mesenteric lymphadenopathy,4 had free fluid collectin,2 had appendicular mass,1 had bowel adhesions. So in most of the cases in spite of abdominal pain USG finding was normal & create dilemmas. On DL 5 patients had normal DL finding,4 had appendicitis,6 had dilated bowel loop,2 had mesenteric lymohadenopathy,13 had free fluid collection,3 had appendicular mass & 7 had bowel adhesions. We also got additional diagnosis of TB tubercles, bands, chocolate cyst of ovary, bowel gangrene, bowel stricture, PID, adhesions with appendicular mass on DL.

In a series by Syed et al.34 (56.7%) patients' abdominal ultrasound was normal. The most common finding noted on ultrasound abdomen and pelvis was distended bowel loops in right iliac fossa.

TABLE NO 18 (COMPARISION OF USG FINDING)

USG FINDING	**NORMAL**	**DILATED BOWEL LOOP**	**FLUID COLLECTION**
OUR STUDY	27.50%	12.50%	17.50%
SYED ET AL	56.70%	15.50%	13%

CT FINDINGS

Despite of CT scan for evaluation of abdominal pain sometimes it can be difficult to detect the main pathology. DL is very helpful in these type of situation. The advantage of laparoscopy is that it allows a direct view of the abdominal organs and structures without the need for major surgery. Laparoscopy may also be used to perform biopsies or surgical procedures.

In our study, among 40 patients CT scan was done in 21 patients. In 7 patients CT scan was normal. Among them in 4 patients DL was normal and in 3 patients Omental adhesions were present at the scar of previous surgical intervention.In 3 patients CT scan gave diagnosis of only free fluid in abdomen. On DL we found PID in 1 patient and 2 patients' peritoneal tubercles were present.In 2 patients CT scan suggestive of ascites with thickened peritoneum. On DL we found appendicular mass in 1 patient and TB tubercles on peritoneum in 1 patient.In 2 patients CT scan suggestive of only mesenteric LN enlargement. On DL we got additional diagnosis of omental adhesions in 1 patient and TB tubercles in 1 patient.In 4 patients CT scan suggestive of inflamed appendix. On DL we found inflamed appendix in 2 patients and another 2 patient's appendix was long without inflammation.In 1 patient Ct scan suggestive of Koch's abdomen. On DL along with Koch's abdomen we got additional diagnosis of omental adhesions.In 2 patients CT scan suggestive of intestinal stricture. On DL we found that stricture was due to the bands.So DL is superior to CT scan in surgical dilemmas. Peritoneal tubercles, omental adhesions, bands are the common findings that can be missed on CT scan or not detected

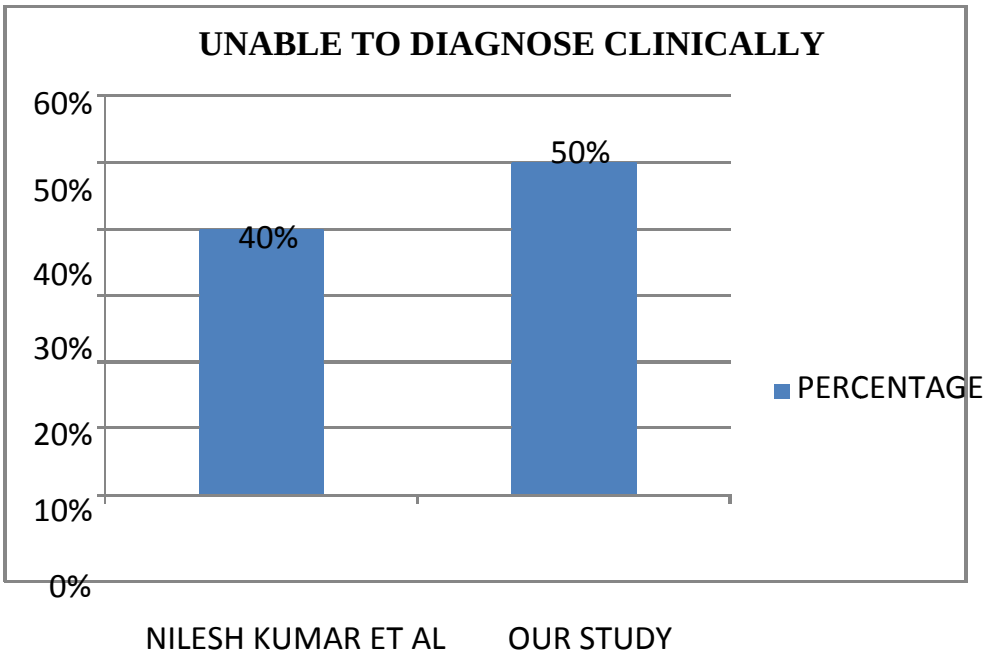
.CLINICAL DIAGNOSIS

In our series, among 40 patients we could not reach to any specific diagnosis in 20 patients by investigations and clinically. Post DL we reached to specific diagnosis in 15 patients and could not reach to any diagnosis in 5 patients.In 12 cases clinically we were suspecting appendicitis and post DL we confirmed our diagnosis in 5 patient. In remaining 7 patients diagnosis of appendicitis changed to appendicular mass (3), Koch'sabdomen (1), PID (2) and normal appendix in 1 patient.In 5 patients clinically we were suspecting SAIO and post DL we confirmed our diagnosis in 4 patients and in 1 patient diagnosis changed to appendicitis.In 2 patients clinically we were suspecting Koch's abdomen and confirmed our diagnosis of Koch's abdomen post DL.So in majority of the cases we could not reach to any specific diagnosis clinically and post DL we made specific diagnosis. So DL is helpful to diagnose the abdominal pain with surgical dilemmas.In a series by Nileshkumar et althey could not make any specific clinical diagnosis in 40% of patients & in our study it is 50%.

TABLE NO 19

UNABLE TO DIAGNOSE CLINICALLY

UNABLE TO DIAGNOSE CLINICALLY	PERCENTAGE
NILESH KUMAR ET AL	40%
OUR STUDY	50%



GRAPH NO 18: UNABLE TO DIAGNOSE CLINICALLY DL FINDINGS

In our study among 40 patients,7 had DL findings of adhesions,4 had inflamed appendix,3 had appendicular mass,5 had tubercles,2 had bands,1 had chocolate cyst of ovary,1 had small bowel gangrene,1 had ileal stricture,2 had PID,1 had ascites with appendicitis,2 had ascites with tubercles,1 had adhesions with appendicular mass and PUH,4 had large appendix without inflammation,1 had normal appendix and 5 patients had no abnormal find So most common DL findings are adhesions(17.5%) followed by TB tubercles(12.5%) and inflamed appendix(10%).Adhesions were mostly occurred over previous scar of surgical intervention & these type of adhesions could not detected by Usg or Ct scan & so it creates surgical dilemmas.Tb tubercles over the peritoneum also could not detected by these radiological investigations and creates surgical dilemmas.

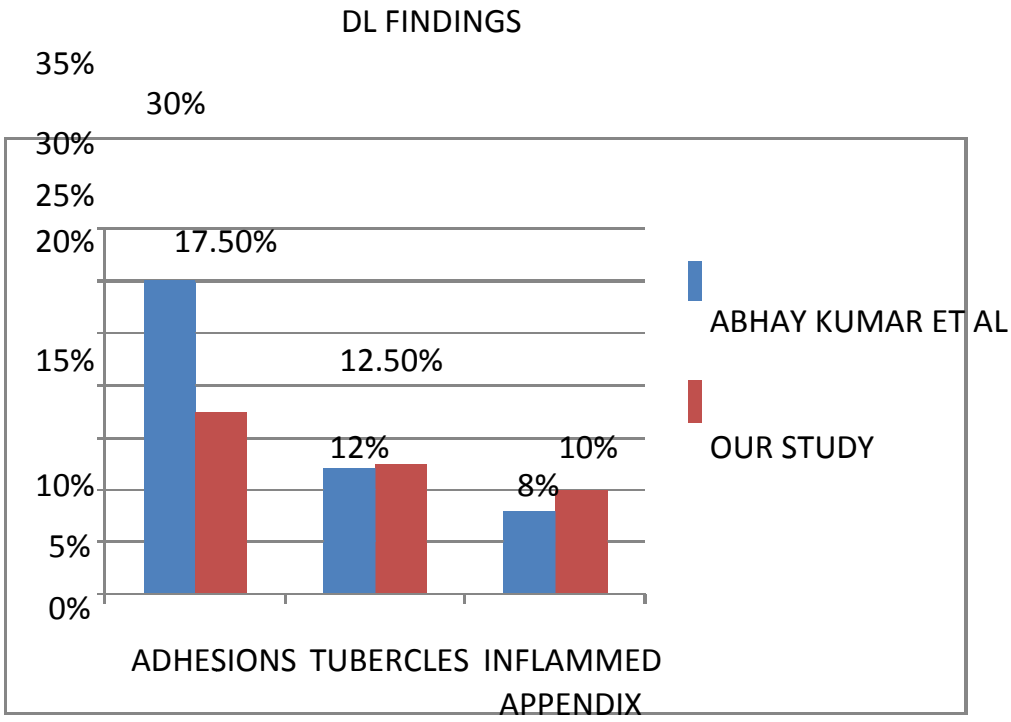
In a series of Abhaykumar et almost common DL findings are adhesions (30%)

Followed by TB tubercles (12%) and inflamed appendix (8%)
ings.

TABLE NO 20

COMPARISION OF DL FINDING WITH OTHER STUDY

DL FINDINDS	ADHESIONS	TUBERCLES	INFLAMMED APPENDIX
ABHAY KUMAR ET AL	30%	12%	8%
OUR STUDY	17.50%	12.50%	10%



GRAPH NO 19:

COMPARISION OF DL FINDING WITH OTHER STUDY

LAPROSCOPIC PROCEDURE PERFORMED

In this study we did laparoscopic intervention in most of the cases. Laparoscopic adhesinolysis were performed in 5 patients. In 1 patient adhesinolysis with biopsy of tubercles over the peritoneum done. In 1 patient adhesinolysis with appendicectomy was performed. In 7 patients laproscopicappendicectomy were performed. In 1 patient laproscopicappendicectomy with aspiration of ascitic fluid performed & sent for cytology. I1n 8 patients only biopsy were taken & sent for histopathology examination. In 1 patient only abdominal fluid sent for cytological examination. In 2 patients releasing of intestinal bands performed. In 1 patient ilealstricturoplasty was performed. In 11 patients no intervention was done.

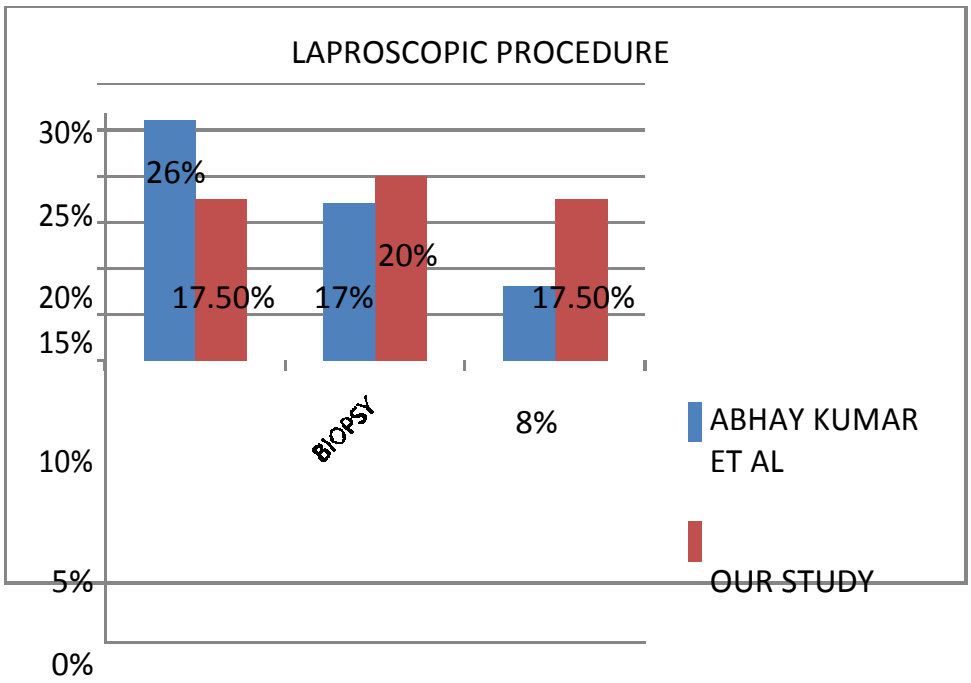
So most common procedure done was biopsy (20%) followed by adhesinolysis(17.5%) Andappendicectomy(17.5%)

In a series by Abhaykumar et almost common procedure done was adhesinolysis(26%) followed by biopsy (17%) and appendicectomy(8%) & it correlates with our study.

TABLE NO 21

COMPARISION OF LAPROSCOPIC PROCEDURE WITH OTHER STUDY

LAPROSCOPIC PROCEDURE	**ADHESINOLYSIS**	**BIOPSY**	**APPENDICECTOMY**
ABHAY KUMAR ET AL	26%	17%	8%
OUR STUDY	17.50%	20%	17.50%



GRAPH NO 20:

COMPARISION OF LAPROSCOPIC PROCEDURE WITH OTHER STUDY

DIAGNOSIS MADE AFTER DL

TABLE NO 22:

DIAGNOSIS MADE AFTER DL

Diagnosis after DL	**Total no of cases**	**Unable to diagnose preoperatively**	**Diagnosis confirmed**	**Diagnosis changed**
Koch's abdomen	6	2	2	2
Acute appendicitis	6	0	5	1
Chronic appendicitis	3	2	0	1
Appendicular Mass	4	0	1	3
Chocolate cyst of ovary	1	1	0	0
PID	3	1	0	2
SAIO	3	0	2	1
Adhesions	5	3	0	2
Bowel gangrene	1	1	0	0
Metastasis malignancy	2	1	0	1

Out of the 40 patients who underwent DL,6(15%) patients were diagnosed with Koch's abdomen in our study. Among them we could not reach to any definitive diagnosis in 2 cases preoperatively and post DL they diagnosed as abdominal Koch's. In 1 case we were suspecting chronic appendicitis & it turned out as a case of Koch's abdomen. In 1 case we were suspecting SAIO & post DL we got additional diagnosis of Koch's abdomen along with SAIO. In 2 cases we were suspecting Koch's abdomen & confirmed our diagnosis on DL.

In these cases we took biopsy of the tubercles over the anterior abdominal wall, omentum, mesentry and peritoneum& sent to histopathology examination and on HPE they turned out as a TB tubercles. After DL anti tubercular treatment started in these patients.Acute appendicitis is the most common cause of acute abdomen requiring surgical intervention. Although typical, uncomplicated cases of acute appendicitis are easy to diagnose and treat, diagnosis of atypical appendicitis is a difficult task and remains challengeWe have diagnosed 6(15%) patients with acute appendicitis in our study. Among them we confirmed preoperative diagnosis of acute appendicitis in 5 cases on DL. In 1 case USG suggestive of moderate ascitis and on DL we found inflamed appendix with ascitis. Laproscopicappendicectomy with cytological ascitic fluid examination was done & turned out as lymphocyte rich fluid. In all these 6cases laproscopicappendicectomy was performed.We have diagnosed 3(7.5%) cases of chronic appendicitis in our study. In 1 case we were suspecting SAIO & on DL chronic appendicitis was found. In 2 cases we could not reached to any diagnosis preoperatively and on DL found chronic appendicitis. In all these cases laproscopicappendicectomy was done.

In 1(2.5%) case clinical finding and USG suggestive of acute appendicitis but on DL appendix was normal and because of DL unnecessary appendicectomy was avoided. We diagnosed 4 patients of appendicular mass in our study. 3(7.5%) cases with appendicular mass &1(2.5%) with appendicular mass + para umbilical hernia .Among them we were suspecting appendicitis in 3 patients & in DL appendicular mass were found. In 1 patient we were suspecting appendicular mass but on DL we found appendicular mass along with omental adhesions to the anterior abdominal wall and para umbilical hernia.In this patient laproscopicadhesinolysis& open para umbilical hernia repair was done

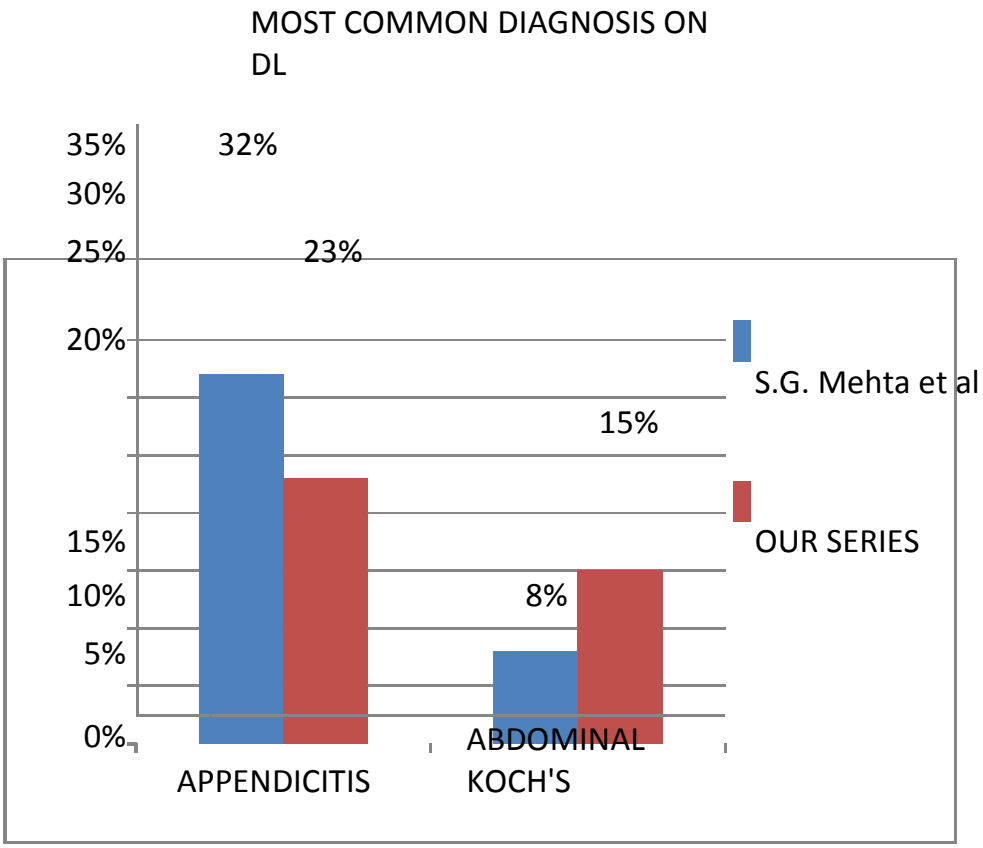
.Diagnostic Laparoscopy is also important in females of reproductive age group with surgical dilemmas to confirm or refute pelvic pathology. In 1(2.5%) female patient we could not reach up to the definitive diagnosis of abdominal pain and collection in right iliac fossa & on DL chocolate cyst of ovary was found. In 3(7.5%) female patients we made diagnosis of PID after DL.Among them in 2 patients we were suspecting appendicitis preoperatively and in 1 patient we could not made any diagnosis preoperatively.In 3(7.5%) patients we were suspecting sub acute intestinal obstruction and on DL we found obstruction due to the bands in 2 cases. So releasing of bands was done & avoid unnecessary laprotomy. In 1 patient we found stricture 1 feet proximal to ic junction &laproscopicstricturoplasty was done.In our study we made diagnosis of 5(12.5%) cases of abdominal pain due to the adhesions on DL. Among them 1 had omental adhesions at previous scar of laprotomy,1 had adhesions at previous LSCS scar and 1 had adhesions at previous scar of hysterectomy. In these patients laproscopicadhesinolysis was done. 2 patients

Had SAIO due to the adhesions and in 1 patient because of excess adhesions open mini laparotomy and adhesolysis was performed.

In 1(2.5%) patient we could reach up to the definitive diagnosis of abdominal pain and on DL we found gangrene of small bowel. In this patient laparotomy with resection and anastomosis was done.We made diagnosis of metastasis malignancy in 2(5%) cases. In one patient with pain abdomen for evaluation we found metastasis to peritoneum with ascites and it turned out to be a metastatic adenocarinoma on biopsy. The primary was not found even after evaluation. Another case suspected to have liver abscess ruptured, diagnosed as liver secondaries on diagnostic laparoscopy; primary of which also could not be found. Thus suspected benign pathology turned out to be malignancy on diagnostic laparoscopy and management changed.In 5(12.5%) patients even after DL we could not made any diagnosis for abdominal pain.So we found that Koch's abdomen and appendicitis are common diagnosis that can be missed on investigations or create dilemmas more commonly.In a study by Dr .S.G. Mehta et al, on role of diagnostic laparoscopy in management of abdominal pain, 25 patients underwent DL.In their series 32% patients had appendicitis & 8% had abdominal TB.In our series 23% patients had appendicitis & 15% had abdominal TB.

TABLE NO 23 (MOST COMMON DIAGNOSIS ON DL)

MOST COMMON DIAGNOSIS ON DL	APPENDICITIS	ABDOMINAL KOCH'S
S.G. Mehta et al	32%	8%
OUR SERIES	23%	15%



GRAPH NO 21

MOST COMMON DIAGNOSIS ON DL

COMPLICATIONS

In our series One patient had bleeding from port site and another patient had wound infection. So among 40 only 2 patients had complications which suggests that Diagnostic Laparoscopy is safe, cosmetic with lesser complications and lesser morbidity and mortality.

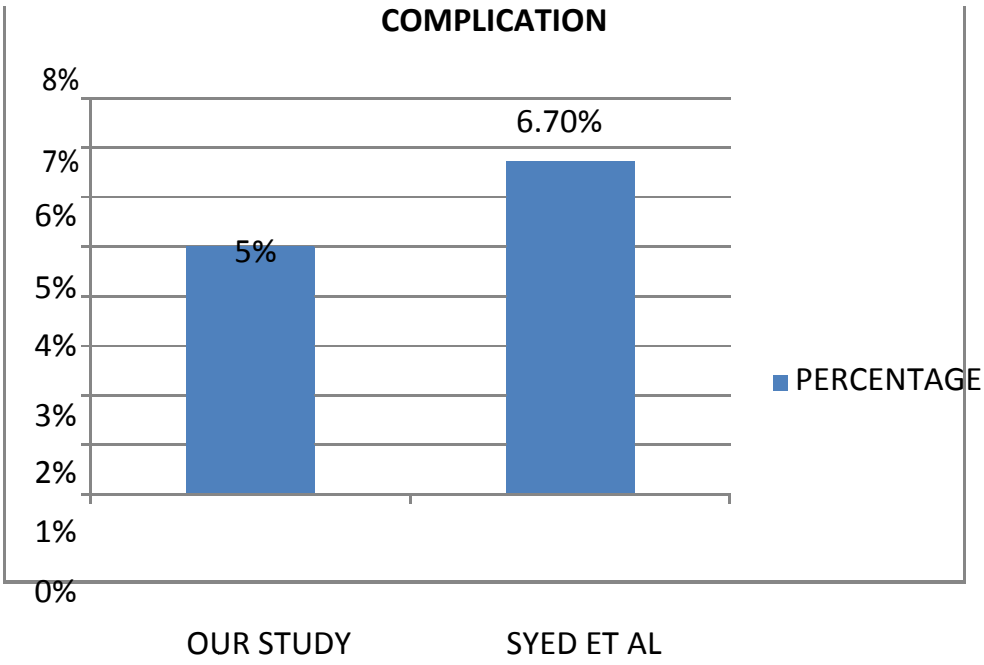
In a case series of 60 patients by Syed et alto evaluate the role of diagnostic laparoscopy in vague abdominal pain only 4 had minor complications.

TABLE 24

COMPARISION OF POST OPERATIVE COMPLICATIONS

WITH OTHER STUDY

COMPLICATIONS	PERCENTAGE
OUR STUDY	5%
SYED ET AL	6.70%



GRAPH 22:

COMPARISION OF POST OPERATIVE COMPLICATIONS

WITH OTHER STUDY

EFFECT OF DL ON DIAGNOSIS

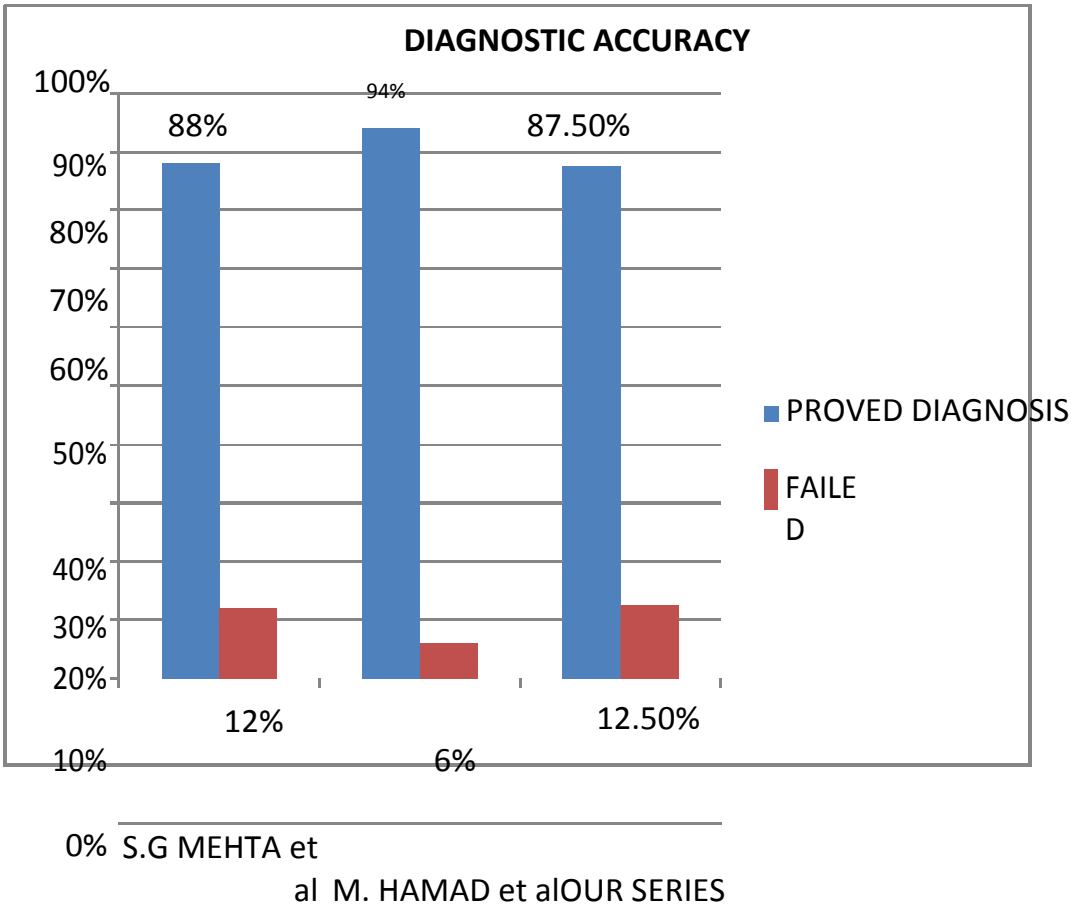
In our series among 40 patients DL confirmed pre-operative diagnosis in 11(27.5%) cases whereas in 9(22.5%) cases the diagnosis had changed. 15(37.5%) cases were diagnosed after DL for whom no definitive pre-operative diagnosis was made. So in majority of cases(37.5%) we could not reach to any specific diagnosis preoperatively and after DL we made specific diagnosis. So it suggests that for surgical dilemmas DL is very helpful and diagnostic accuracy of DL is very high. Moreover In only 5(12.5%) cases no diagnosis could be made by DL which suggests that failure rate is very low.

Diagnostic laparoscopy was able to establish diagnosis in 88% of cases in S. G. Mehta's serieswhereas in the series of M. Hamad Al-Akeelyit was 94%. Our series had a diagnostic accuracy of 87.5% and failed to make diagnosis in 12.5%.

TABLE NO 25

COMPARISION OF DIAGNOSTIC ACCURACY

DIAGNOSTIC ACCURACY	PROVED DIAGNOSIS	FAILED
S.G MEHTA ET AL	88%	12%
M. HAMAD ET AL	94%	6%
OUR SERIES	87.50%	12.50%



GRAPH NO 23:

COMPARISION OF DIAGNOSTIC ACCURACY

CONVERSION RATE

With the growing availability of experienced operators, the morbidity of laparoscopy is much less of an issue and with improved skills conversion rates will be lower. Out of 18 patients in whom we tried to operate laparoscopically, 3 underwent open procedure. In 1 patient open para umbilical hernia repair was done. In another open resection and anastomosis was done for gangrene of small bowel.1 patient underwent mini laparotomy and adhesolysis for extensive adhesions. Compared to series of S. G. Mehta et alwho had 19% conversion rate our series Had 17%. In another series Mohammed Hamad Al-Akeely et alhad 6% conversion rate.

TABLE NO 26

COMPARISION OF CONVERSION RATE

CONVERSION RATE	**PERCENTAGE**
S.G MEHTA ET AL	19%
M. HAMAD ET AL	6%
OUR SERIES	17%

LIMITATION OF THE STUDY

The limitations of present study is that the diagnostic laparoscopy is performed by different surgeons to different patients. The accuracy, yield and conversion rate depends on the experience of the surgeon.

CONCLUSION

Following are the conclusions derived from our study**"ROLE OF DIAGNOSTIC LAPAROSCOPY IN NONSPECIFIC ABDOMINAL PAIN."**

Surgical dilemmas are more common in young age group.

Surgical dilemmas are more common in females.

Diffuse abdominal pain creates surgical dilemmas more oftenly followed by right iliac fossa pain.

Surgical dilemmas are more common in chronic abdominal pain.

Diagnostic laparoscopy is superior to USG and CT scan in surgical dilemmas.

Diagnostic laparoscopy is helpful in making specific diagnosis in most of the cases where there is no specific clinical diagnosis.

Diagnostic Laparoscopy is helpful in confirming a diagnosis made on clinical grounds and laboratory evaluation.

Most common DL findings are adhesions followed by TB tubercles and inflamed appendix.

Diagnostic laparoscopy is therapeutic in some of the cases by performing definitive procedure. Most common procedure done was biopsy followed by adhesinolysis and appendicectomy.

Appendicitis and Koch's abdomen are common diagnosis that can be missed on investigations or create dilemmas more commonly.

Diagnostic Laparoscopy is safe, cosmetic with lesser complications and lesser morbidity and mortality.

Diagnostic accuracy of DL is very high & failure rate is very low.

- With the growing availability of experienced operators, the morbidity
It reduces chances of unnecessary laparotomies.

It reduces patient suffering by establishing definitive diagnosis and thus early initiation of definitive treatment.

Diagnostic Laparoscopy is specifically important in females of Reproductive age group with pain abdomen to confirm or refute pelvic pathology.

SUMMARY

1. Surgical dilemmas are more common in young age group. We had patients of all age groups starting from 18 years to 64 years (mean age 35 years).40% of them were between 18 to 27 years.
2. Surgical dilemmas are more common in females. In our study we had 28 (70%) female and 12 (30%) male patients.
3. Diffuse abdominal pain creates surgical dilemmas more often followed by right iliac fossa pain. In our series Out of 40 patients,14 patients had diffuse abdominal pain (35%) & 13 had RIF pain (32.50%)
4. Surgical dilemmas are more common in chronic abdominal pain. In our series most of the patients (12 patients,30%) had pain duration of more than 30 weeks. Average pain duration of our study is 21 weeks.
5. In our study in most of the patients(27.5%) inspite of abdominal pain USG finding was normal & create dilemmas. The most common finding noted on ultrasound abdomen and pelvis was distended bowel loops (12.5%).
6. In our study in most of the patients (50%) no specific diagnosis was made clinically & post DL we reached to specific diagnosis in 75% of the patients.
7. In our study most common DL findings are adhesions (17.5%) followed by TB tubercles (12.5%) and inflamed appendix (10%).
8. In our study most common procedure done was biopsy (20%) followed by adhesinolysis(17.5%) and appendicectomy(17.5%) which suggests that DL is not only diagnostic but therapeutic also.

9. Appendicitis and Koch's abdomen are common diagnosis that can be missed on investigations or create dilemmas more commonly. In our series 23% patients had appendicitis & 15% had abdominal TB.

10. Complications of DL are very less. In our study Among 40 only 2 patients had complications .1 had port side bleeding and another had wound infection.

11. DL confirmed pre-operative diagnosis in 11(27.5%) cases whereas in 9(22.5%) cases the diagnosis had changed. 15(37.5%) cases were diagnosed after DL for whom no definitive pre-operative diagnosis was made.

12. Diagnostic accuracy of DL is very high. In our study it is 87.5%.

13. Moreover In only 5(12.5%) cases no diagnosis could be made by DL which suggests that failure rate is very low.

14. With the growing availability of experienced operators, the morbidity of laparoscopy is much less of an issue and with improved skills conversion rates will be lower. Conversion rate of our study is 17%.

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ANNEXURE I

ABBREVIATIONS

ADA	-	Adenosine De-Aminase
BP	-	Blood Pressure
CCD	-	Charged Coupled Device
CO_2	-	Carbon Di-oxide
COPD	-	Chronic Obstructive Pulmonary Disease
CT	-	Computed Tomography
CVP	-	Central Venous Pressure
CWP	-	Capillary Wedge Pressure
DL	-	Diagnostic Laparoscopy.
DP	-	Diagnostic Peritoneoscopy
GA	-	General Anaesthesia
GI	-	Gastrointestinal
HBs Ag	-	Hepatitis B surface Antigen
HIV	-	Human Immunodeficiency Virus
IVC	-	Inferior Vena Cava
LDH	-	Lactate De-Hydrogenase
MAP	-	Mean Arterial Pressure
MRI	-	Magnetic Resonance Imaging
PFT	-	Pulmonary Function Tests
PID	-	Pelvic Inflammatory Disease
PUH	-	Para Umbilical Hernia
TL	-	Therapeutic Laparoscopy.
USG	-	Ultra Sonography

GOVT.STANLEY MEDICAL COLLEGE, CHENNAI- 600 001
INFORMED CONSENT

DISSERTATION TOPIC:

"ROLE OF DIAGNOSTIC LAPAROSCOPY IN NONSPECIFIC ABDOMINAL PAIN."

PLACE OF STUDY: GOVT. STANLEY MEDICAL COLLEGE, CHENNAI

NAME AND ADDRESS OF PATIENT:

I, _____ have been informed about the details of the study in my own Language.

I have completely understood the details of the study.

I am aware of the possible risks and benefits, while taking part in the study.

I understand that I can withdraw from the study at any point of time and even then, I will continue to receive the medical treatment as usual.
I understand that I will not get any payment for taking part in this study.

I will not object if the results of this study are getting published in any medical journal, provided my personal identity is not revealed.

I know what I am supposed to do by taking part in this study and I assure that I would extend my full co-operation for this study.

Name and Address of the Volunteer:

Signature/Thumb impression of the Volunteer:

Date:

Witnesses:

(Signature, Name & Address)

Date:

Name and Signature of Investigator:

ANNEXURE I1

PROFOMA

Name

Age **DOA**

Sex **DOD**

I.P.D no-

Presenting Complains

PAIN ABDOMEN:

Site

Duration

Nature: Aching / Burning / stabbing / Dull aching/colicky

Mode of onset: Insidious / Sudden

Intensity:

Radiation:

Periodicity:

Relieving factors:

Aggravating factors:

Relation to food intake:

VOMITING:

Duration:

Frequency:

Contents:

Induced / spontaneous:

FEVER

Duration:

Degree (grade): High / low / moderate

Type: Intermittent / Continuous

Evening rise:

Night sweats:

Chills/ Rigors:

ABDOMINAL DISTENSION:

Duration:

Progression:

ALTERED BOWEL HABITS:

Diarrhoea:

Duration:

Frequency:

Nature of stools:

Blood in stools:

Constipation:

Tenesmus:

Steatorrhea:

MASS/ ABDOMEN:

Duration:

Onset:

Site:

Number:

Associated Symptoms:

Progression/ Regression:

PAST HISTORY:

Similar Illness

Abdominal Surgery

PERSONAL HISTORY

Diet:

Appetite:

Bowel habits:

Bladder habits:

Sleep:

Smoking:

Alcoholism:

Menstrual history:

Obstetric history:

FAMILY HISTORY

Similar Illness

Tuberculosis

Diabetes mellitus

Hypertension

Asthma

Ischemic Heart Disease

GENERAL PHYSICAL EXAMINATION:

Built: Well / Moderate / Poor

Nourishment: Well / Moderate / Poor

Vital signs:

Pulse: Rhythm: Volume:
Rate:

BP:

Temp:

R.R:

Jaundice:

Anaemia:

Clubbing of fingers: Yes / No.

Lymphadenopathy: Yes / No

Group involved: Cervical /Axillary

/Inguinal/Popliteal Tender / Non tender

Consistency: Soft / firm / Rubbery / Hard/ Matted / Discrete

Mobility: Yes / No

Pedal edema: Yes / No, Pitting / Non pitting

Signs of dehydration: Yes / No.

Per ABDOMEN

Inspection:

Shape: Flat / Scaphoid / Distended

Umbilicus: Shape / size / site

Flanks:

Visible veins: Yes / No/ Type of flow

Visible scars and Sinuses:

Movement with respiration:

Visible Mass/ fullness: Site, Size, Shape, Number, Surface, Borders, Extent

Movements with respiration

Leg lifting test

Head raising test

Visible pulsation: Yes / No

Visible Peristalsis: Yes / No/ Type

Hernial Sites:

External genitalia:

Palpation:

Local rise of temp:

Tenderness: present / absent / Site

Feel of abdomen – soft / doughy/ guarding / Rigidity

Mass: Site:

Size:

Shape:

Situation:

Extent:

Surface: Smooth /Nodular / granular / Bosselated

Borders: Regular / Irregular / ill-defined

Consistency: Soft / firm / Hard / Cystic /

Varying Tenderness:

Movement with respiration:

Independent mobility: Restricted /Free- Horizontal / Vertical

Pulsations: Transmitted / Expansible

Plane of the swelling:

Bimanually palpable: Yes / No

Ballottability: Yes / No

Compressibility:

Involvement of abdominal wall

Liver: Tenderness /Extent /Surface /Borders /Consistency

Spleen: Tenderness /Extent/ Surface/Border/ Splenic notch /Consistency

Genital examination:

Per rectal/Vaginal examination:

Examination of back & spine

Renal angle: Fullness- Yes / No

Tenderness: Yes / No

Spine: Deformity – Yes / No

Tenderness: Yes/No

Para spinal Rigidity: Yes / No

Percussion:

Over the swelling

Liver dullness/span:

Splenic dullness:

Free fluid: Yes/No

Fluid thrill/ shifting dullness/puddle's sign

Bladder: Yes / No

Renal Angle: Resonant/ dull

Auscultation:
Bowel sounds: Yes / No .Frequency/ character

SYSTEMIC EXAMINATION:

Respiratory system:

CNS:

CVS:

Bones & Joints:

PROVISIONAL DIAGNOSIS:

INVESTIGATIONS:

HB%:

TC:

DC:

Platelet count

ESR:

PT/INR :

Urine: Routine / Micro

RBS

Blood Urea

Serum Creatinine:

LFT

S. Amylase

S. Lipase

S.Electrolyt

es

HIV/HBSA

G CXR

X-RAY ABDO-Supine/Erect

USG-Abdomen/Pelvis

CT ABDOMEN

PROVISIONAL DIAGNOSIS

LAPROSCOPIC FINDINGS

LAPROSCOPIC INTERVENTION DONE(IF ANY)

CONVERSION TO LAPROTOMY(IF ANY)

HISTOPATHOLOGY REPORT

COMPLICATIONS-Intraoperative/Postoperative

FINAL DIAGNOSIS

FOLLOW UP

REMARKS

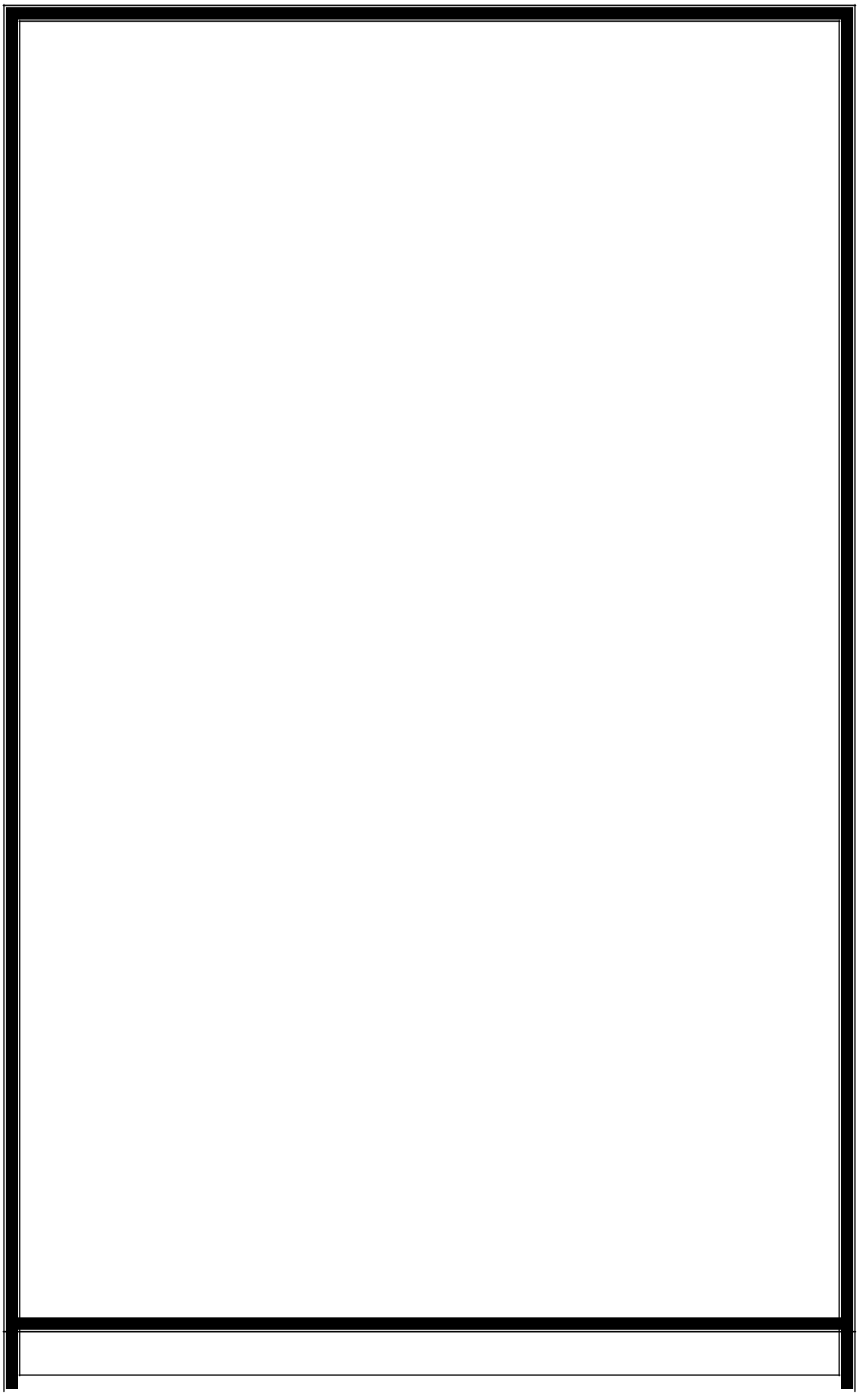
MASTERCHART

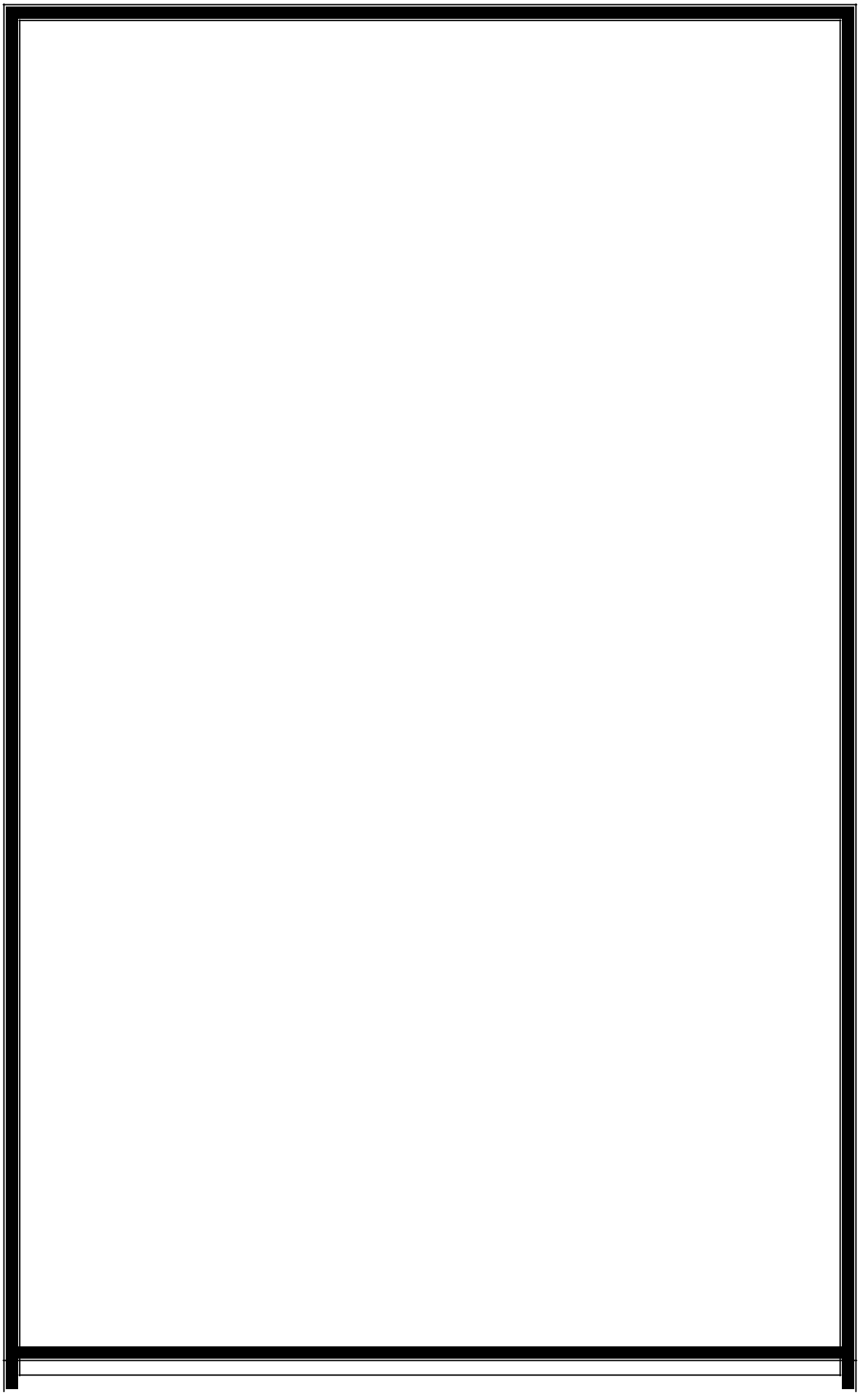
SERIAL NO	AGE/SEX	PAIN IN ABDO	DURATION OF PAIN	ABDO DISTENTION	LOSS OF AP/WT	BOWEL SYMPTOMS	FEVER	OTHERS	PAST SURGERIES	BLOOD INVESTIGATIONS (ANY POSITIVE)	USG	CT ABDO
1	38/F	LIF PAIN	29 WEEKS	A	A	A	A	A	HYSTRECTOMY-2 YRS	NO	NORMAL	MESENTRIC LN ENLARGEMENT
2	22/F	DIFFUSE ABDO PAIN	5 DAYS	P	P	CONSTIPATION (ON & OFF)	A	A		NO	BOWEL FILLED WITH GAS	P/O STRICTURE IN DISTAL ILEUM WITH MILD ASCITES
3	27/M	CHRONIC RIF PAIN	18 WEEKS	A	A	A	P	A		WBC 13000	MILD ASCITES	MILD ASCITES+ THICKENED PERITONEUM
4	21/F	UPPER ABDO PAIN	24 WEEKS	P	P	DIARRHOEA	P	A		NO	MODERATE ASCITES	APPENDICITIS + RT SIDE PLEURAL EFFUSION
5	28/F	LOWER ABDO PAIN	31 weeks	A	A	A	A	A		NO	NORMAL	FREE FLUID IN POD
6	44/M	DIFFUSE ABDO PAIN	7 WEEKS	P	P	A	A	A		NO	MILD ASCITES	FREE FLUID IN abdo
7	24/F	RIF PAIN	3 DAYS	A	A	A	P	A		NO	APPENDICITIS	
8	46/F	DIFFUSE ABDO PAIN	34 WEEKS	A	A	A	A	A		NO	NORMAL	NORMAL
9	60/M	DIFFUSE ABDO PAIN	6 DAYS	P	P	CONSTIPATION	A	A			DILATED BOWEL LOOPS	
10	21/F	RIF PAIN	22 WEEKS	A	A	A	A	A		NO	APPENDICITIS	
11	55/M	DIFFUSE ABDO PAIN	4 DAYS	P	P	CONSTIPATION	A	A		NO	DILATED BOWEL LOOPS	
12	32/F	UMBILICAL PAIN	3 DAYS1	A	A	A	A	A		NO	INFLAMMED APPENDIX	
13	28/F	HYPOGASTRIC PAIN	37 WEEKS	A	A	A	A	A	LSCS 2 MONTHS BACK	NO	NORMAL	NORMAL
14	23/M	DIFFUSE ABDO PAIN	7 WEEKS	P	A	A	A	A		NO	MODERATE ASCITES	FREE FLUID + INFLAMMED APPENDIX
15	37/F	PAIN IN LIF	33 WEEKS	A	A	A	A	A		NO	NORMAL	NORMAL
16	33/F	UMBILICAL PAIN	35 WEEKS	A	A	A	A	N/V		NO	MESENTRIC LYMPHADENOPATHY	NORMAL
17	30/F	RIF PAIN	8 WEEKS	A	A	A	P	A		WBC 12000	ACUTE APPENDICITIS	
18	42/M	RIF PAIN	8 WEEKS	A	A	A	A	A		NO	APPENDICITIS	
19	31/F	DIFFUSE ABDO PAIN	12 WEEKS	P	P	CONSTIPATION	A	A		NO	MESENTRIC LYMPHADENOPATHY	P/O STRICTURE ILEUM+ASCITES
20	34/F	DIFFUSE ABDO PAIN	31 WEEKS	A	A	A	A	A		NO	APPENDICITIS	
21	56/F	DIFFUSE ABDO PAIN	28 WEEKS	P	P	CONSTIPATION	P	A		NO	MULTISEPTETED FLUID COLLECTION+OMENTAL THICKENING	ASCITES + OMENTAL CAKING S/O KOCH'S
22	27/F	RIF PAIN	6 WEEKS	A	A	A	P	N/V		NO	APPENDICULAR MASS	

23	63/M	UPPER ABDO PAIN	9 WEEKS	P	P	A	P	N/V		WBC 15500	FATTY LIVER+ MODERATE ASCITES+RT PLURAL EFFUSION	
24	23/F	RIF PAIN	5 WEEKS	A	A	DIARRHOEA	P	N/V		NO	PROBE TENDERNESS AT RIF + FREE FLUID	
25	48/F	LOWER ABDO PAIN	35 weeks	A	A	A	A	A	TUBECTOMY 30 YRS BACK	NO	NORMAL	NORMAL
26	64/F	LOWER ABDO PAIN	22 WEEKS	P	A	A	A	A		NO	?APPENDICULAR MASS	
27	28/F	LOWER ABDO PAIN	24 WEEKS	A	A	A	P	A		NO	NORMAL	ENLARGED APPENDIX
28	20/M	DIFFUSE ABDO PAIN	34 weeks	P	P	A	P	A		NO	SPLEENOMEGALY+ASCITES	THICKENED PERITONEUM+ASCITES+LT PLEURAL EFFUSION
29	23/F	RIF PAIN	3 DAYS	A	A	A	P	N/V		NO	NORMAL	
30	21/F	RIF PAIN	6 WEEKS	A	A	A	A	A		WBC 19000	COLLECTION IN RIF	
31	26/F	DIFFUSE ABDO PAIN	32 weeks	A	A	A	A	A		NO	FREE FLUID IN POD	
32	34/F	RIF PAIN	21 WEEKS	P	A	A	A	A		NO	FLUID FILLED DILATED BOWEL LOOPS	
33	58/M	HYPOGASTRIC PAIN	26 WEEKS	P	A	A	A	A	APPENDICETOMY 20 YRS BACK	NO	ASCITES	FREE FLUID IN ABDO
34	38/F	DIFFUSE ABDO PAIN	6 DAYS	P	P	CONSTIPATION	A	N/V		NO	MULTIPLE DILATED BOWEL LOOPS	
35	22/F	DIFFUSE ABDO PAIN	40 WEEKS	A	A	A	A	A		NO	MESENTRIC LYMPHADENOPATHY	NORMAL
36	27/M	RIF PAIN	4 DAYS1	A	A	A	A	A		NO	PROBE TENDERNESS AT RIF + NORMAL APPENDIX	
37	25/F	RIF PAIN	26 WEEKS	A	A	A	A	A		NO	MESENTRIC LYMPHADENOPATHY	MESENTRIC LN ENLARGEMENT
38	39/M	DIFFUSE ABDO PAIN	38 WEEKS	P	A	A	A	A	LAPROTOMY 5 YRS BACK	NO	NORMAL	NORMAL
39	23/F	RIF PAIN	32 WEEKS	A	A	A	A	A		NO	NORMAL	APPPENDICITIS
40	44/M	LIF PAIN	6 DAYS	P	A	CONSTIPATION	A	N/V		NO	BOWEL ADHESION IN LIF	

DL FINDINGS	LAP INTERVENTION	CONVERSION(IF ANY)	HPE REPORT	CLINICAL DIAGNOSIS	FINAL DIAGNOSIS	COMPLICATIONS
ADHESIONS	ADHESINOLYSIS	NO		ABDO PAIN UNDER EVALUAION	POST HYSTRECTOMY ADHESIONS	NO
NO STRICTURE, BANDS PRESENT	RELEASING OF BANDS	NO		SUB ACUTE INTESTINAL OBS	ILEAL OBS DUE TO BANDS	BLEEDING AT PORT SITE
APPENDICULAR MASS		NO		ACUTE APPENDICITIS	APPENDICULAR MASS	NO
TINY TUBERCLES OVER PERITONUM + ASCITES	BIOPSY OF TUBERCLES	NO	ABDOMINAL KOCH'S	ABDO PAIN UNDER EVALUAION	ABDOMINAL KOCH'S	NO
PID	FLUID CYTOLOGY	NO	PUS CELLS +	ABDO PAIN UNDER EVALUAION	PID	NO
FREE FLUID + PERITONEAL SEEDING	BIOPSY OF SEEDING	NO	METASTATIC ADENOCARCINOMA	ABDO PAIN UNDER EVALUAION	METASTATIC ADENOCARCINOMA	NO
APPENDICITIS	APPENDICECTOMY	NO	APPENDICITIS	APPENDICITIS	APPENDICITIS	NO
NORMAL	NO	NO		ABDO PAIN UNDER EVALUAION	NONSPECIFIC ABDO PAIN	NO
GANGRENE OF SMALL BOWEL	CONVERT TO OPEN	LAPROTOMY + RA		ABDO PAIN UNDER EVALUAION	SMALL BOWEL GANGRENE	NO
PID	NO	NO		APPENDICITIS	PID	NO
INTESTINAL OBSTRUCTION-ADHESIVE	CONVERT TO OPEN	MINILAPROTOMY+ADHESINILYSIS		ABDO PAIN UNDER EVALUAION	SAIO-ADHESIVE	WOUND INFECTION
APPENDICITIS	APPENDICECTOMY	NO	APPENDICITIS	APPENDICITIS	APPENDICITIS	NO
OMENTAL ADHESION AT LSCS SCAR	ADHESINOLYSIS	NO		ABDO PAIN UNDER EVALUAION	POST LSCS ADHESIONS	NO
ASCITES+APPENDICITIS	APPENDICECTOMY+FLUID CYTOLOGY	NO	LYMPHOCYTE RICH FLUID+appendicitis	ABDO PAIN UNDER EVALUAION	APPENDICITIS	NO
NAD	NO	NO		ABDO PAIN UNDER EVALUAION	NONSPECIFIC ABDO PAIN	NO
NO LN ENLARGEMENT	NO	NO		MESENTRIC LYMPHADENOPATHY	NON SPECIFIC ABDO PAIN	NO
LARGE APPENDIX WITHOUT INFLAMMATION	APPENDICECTOMY	NO	APPENDICITIs	ACUTE APPENDICITIS	SUB ACUTE APPENDICITIS	NO
APPENDICULAR MASS		NO		APPENDICITIS	APPENDICULAR MASS	NO
STRICTURE 1 FEET PROXIMAL TO IC JUNCTION	STRICTUROPLASTY	NO		SUB ACUTE INTESTINAL OBS	ILEAL STRICTURE	NO
NORMAL APPENDIX		NO		ACUTE APPENDICITIS	NORMAL APPENDIX	NO
MULTIPLE BOWEL ADHESION & FIBROUS BAND WITHOUT ASCITES	BIOPSY	NO	TB ABDO	KOCH'S ABDO	KOCH'S ABDO	NO
APPENDICULAR MASS		NO		? ACUTE APPENDICITIS	APPENDICULAR MASS	NO
LESION AT RT LOBE OF LIVER+PERITONEAL DEPOSITS+ASCITES	BIOPSY	NO	METASTATIC CARCINOMA	?RUPTURE LIVER ABSCESS	LIVER SECONDARY METASTASIS	NO

APPENDIX NORMAL		NO		ACUTE APPENDICITIS	PID	NO
ADHESIONS AT PREVIOUS SCAR SITE	ADHESINOLYSIS	NO		ABDO PAIN UNDER EVALUATION	SAIO-ADHESIVE	NO
BOWEL ADHESIONS TO ABDO WALL+APP MASS+ PUH	ADHESINOLYSIS	OPEN PUH REPAIR		ABDO PAIN UNDER EVALUATION	APPENDICULAR MASS+PUH	NO
PELVIC VENOUS CONGESTION+ LONG APPENDIX	APPENDICECTOMY	NO	CHRONIC APPENDICITIS	ABDO PAIN UNDER EVALUATION	CHRONIC APPENDICITIS	NO
ASCITES+ MULTIPLE PERITONEAL TUBERCLES	BIOPSY	NO	KOCH'S ABDO	FEVER UNDER EVALUATION(?TB)	KOCH'S ABDO	NO
LONG INFLAMMED APPENDIX	APPENDICECTOMY	NO	ACUTE APPENDICITIS	?ACUTE APPENDICITIS	ACUTE APPENDICITIS	NO
COLLECTION + CHOCOLATE CYST OF OVARY	CYST WALL BIOPSY	NO	CHOCOLATE CYST OF OVARY	ABDO PAIN UNDER EVALUATION	CHOCOLATE CYST OF OVARY	NO
NAD	NO	NO		ABDO PAIN UNDER EVALUATION	NO DIAGNOSIS	NO
CLUMPED SMALL BOWEL LOOP IN RIF+ OMENTUM	ADHESINOLYSIS+APPENDICECTOMY	NO	CHRONIC APPENDICITIS	?SMALL BOWEL OBS	CHRONIC APPENDICITIS	NO
ASCITES+TUBERCLES AT PERITONEUM AND MESENTRY	BIOPSY	NO	TB TUBERCLES	ABDO PAIN UNDER EVALUATION	KOCH'S ABDO	NO
INTESTINAL OBSTRUCTION DUE TO BANDS	RELEASING OF BANDS	NO		SAIO	OBSTRUCTION DUE TO BANDS	NO
NAD	NO	NO		ABDO PAIN UNDER EVALUATION	NO DIAGNOSIS	NO
INFLAMMED APPENDIX	APPENDICETOMY		ACUTE APPENDICITIS	? ACUTE APPENDICITIS	ACUTE APPENDICITIS	NO
TUBERCLES OVER THE PERITONEUM AND MESENTRY	BIOPSY	NO	TB TUBERCLES	CHRONIC APPENDICITIS	KOCH'S ABDO	NO
OMENTAL ADHESIONS AT ANTERIOR ABDO WALL	ADHESINOLYSIS			ABDO PAIN UNDER EVALUATION	OMENTAL ADHESIONS	NO
LARGE APPENDIX WITHOUT INFLAMMATION	APPENDICECTOMY	NO	CHRONIC APPENDICITIS	ABDO PAIN UNDER EVALUATION	CHRONIC APPENDICITIS	NO
ADHESION AT LIF+ TUBERCLES AT PERITONEUM	ADHESINOLYSIS+BIOPSY	NO	TB TUBERCLES	SAIO	SAIO+KOCH'S ABDO	NO





REVIEW OF LITERATURE

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RESULTS & ANALYSIS

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SUMMARY

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PROFORMA

MASTER CHART