EDITORIAL

DIAGNOSTIC LAPAROSCOPY
Utility and solving diagnostic dilemmas

Diagnostic laparoscopy is the basic procedure in laparoscopic surgery that has wide utility in practice, thus avoiding morbidity associated with open surgery. Laparoscopy is a minimally invasive technique wherein a fibre optic instrument is inserted through the abdominal wall to view the organs in abdomen/pelvis and permit the diagnosis and necessary surgical procedure. Nowadays, almost all general surgical procedures can be performed using minimal invasive techniques. Laparoscopy can be performed both for diagnostic as well as for therapeutic purposes.

It is basically the utilization of laparoscopic techniques to diagnose and evaluate intra-abdominal and pelvic symptoms and pathologies. It is a procedure that allows a surgeon to look directly at the contents of the abdomen or pelvis in order to assess the nature of pathology present. This avoids unnecessary morbidities associated with open explorations. It can be used for staging a malignancy, for definitive diagnosis in diagnostic dilemma, and even for obtaining tissue specimen for histopathological diagnosis. Diagnostic laparoscopy is a safe and well tolerated procedure that can be performed in an outpatient or inpatient setting.

Most of the cases, we encountered here are especially those who have been admitted by other departments and after thorough evaluation have not reached to any diagnostic conclusion. Diagnostic laparoscopy in such patients has proved very fruitful in diagnosis as well as further management. Examples vary but tuberculous abdomens and undiagnosed ascites are some of them. Even cutting a congenital peritoneal band, causing chronic abdominal pain in adults due to recurrent subacute obstructions, is another such example. Finding an intraabdominal testis in cryptorchidism in adults and performing laparoscopic orchidectomy in adults is one more such example. Therefore, we can utilize this procedure in a variety of ways as per indications which include (a) Vague abdominal lump, (b) Pain abdomen especially chronic in nature, (c) Staging of malignancy, (d) Undiagnosed ascites, (e) Pelvic inflammatory disease, endometriosis, fertility issues, etc., (f) In children with non-palpable testes and ambiguous genitalia to look for gender, (g) Second look procedure of a previously treated malignancy, (h) Trauma, (i) Critically ill patients in ICU, and (j) Intraperitoneal chemotherapy.

Acute abdominal pain is a common cause for presentation to the emergency room and hospital admission. Many of these patients undergo exploration for suspected appendicitis with negative appendectomy rate being as high as 20-35%. Because of the limited access provided by the conventional appendectomy incisions, a definitive diagnosis may not be found. This is where the role of laparoscopy comes into play in the emergency setting. Even diagnostic laparoscopy can be performed at open surgery like appendectomy, when normal appendix is found, to rule out pelvic pathology especially in females. Early diagnostic laparoscopy and treatment result in accurate prompt and efficient management of acute abdominal pain as the technique reduces the rate of unnecessary laparotomy and increases the diagnostic accuracy.\(^1\)

In a prospective analysis of diagnostic laparoscopy in trauma, hemodynamically stable patients, with equivocal evidence of intraabdominal injury, were prospectively entered into the protocol and it was concluded that diagnostic laparoscopy is the most efficacious for evaluation of equivocal penetrating wounds.\(^2\)

In another retrospective study, carried out in Careggi University Hospital Italy, bedside diagnostic laparoscopy was performed in ICU patients if clinical signs and/or other investigations were suggestive of intraabdominal pathologies without a conclusive diagnosis. Specific indications included unexplained sepsis, MODS, inconclusive radiological examination or inability to perform CT scan due to critical condition. In this study, it was concluded that bedside diagnostic laparoscopy in the ICU setting can be considered an option every time there is a suspicion of an intraabdominal condition based on suggestive but inconclusive laboratory or radiological results, or even when it is difficult to transfer a critically ill patient to the radiological department.\(^3\)

Though the routine use of diagnostic laparoscopy for the evaluation of all cases of female infertility is currently under debate, current evidence indicates that the surgical treatment (adhesiolysis) of minimal or mild endometriosis increases the spontaneous pregnancy rates in infertile women.\(^4\) Such cases are picked early by diagnostic laparoscopy which is the gold standard investigation in endometriosis. Bedside laparoscopy can be utilised to get definitive diagnosis in PID cases and is the gold standard...
investigation in diagnosing pelvic tuberculosis in particular. Diagnostic laparoscopy improves the staging of pancreatic cancer deemed locally unresectable by CT scan because most often than not, occult distant disease will be found in half of the patients with left sided disease and one-fourth of those with right sided pancreatic cancer.[4]

Occasionally, diagnostic laparoscopy is combined with laparoscopic ultrasound in patients with cancer of oesophagus or cardia and various data suggest that combining the two with peritoneal lavage is safe and frequently provides therapeutically relevant new information in patients with locally advanced adenocarcinoma of the distal oesophagus or cardia, whereas the clinical value in patients with squamous cell oesophageal cancer is limited.[5]

Despite improved preoperative imaging techniques, patients with incurable or unresectable gastric cancer are still subjected to diagnostic/non-therapeutic laparoscopy which has been advocated to be essential in decision making in gastric cancer. In a study, it was concluded that laparoscopy is additive to radiology in detecting overall metastatic disease and peritoneal carcinomatosis, and therefore laparoscopy shows significant benefit in changing management and avoiding unnecessary laparotomy in patients with gastric cancer.[6]

Even staging and diagnosing hepatic disease, biliary tumours and others is possible before commencing management. Diagnostic laparoscopy with laparoscopic USG has a forefront role in reducing the unnecessary laparotomies and improves the selection of candidates for resection of colorectal liver metastasis. Diagnostic laparoscopy, although being a valuable modality in reaching to a definitive diagnosis, in times of dilemma yet possesses its own limitations like, (a) Patient should be haemodynamically stable with systolic pressure >90mmHg, (b) Posterior penetrating trauma with likelihood of bowel injury, (c) Patients with bowel obstruction, (d) Known metastatic disease, (e) Multiple prior surgeries/adhesions, (f) Inability of the patient to tolerate pneumoperitoneum or general anaesthesia and (g) Limited laparoscopic expertise.

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REFERENCES
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