INTRODUCTION

One of the most common malignancies affecting human being worldwide are Gastrointestinal malignancies. But most of them found to be unresectable on exploratory laparotomy. Diagnostic laparoscopy considered and suggested as the most sensitive procedure for detecting metastasis and assessing operability in this categories of patients. Though spectra of investigations procedures and available to diagnose, detect and stage various gastrointestinal malignancies, Diagnostic laparoscopy have a unique place in the array of different modalities of investigations. The main role of Diagnostic laparoscopy over other imaging methods is in identifying the peritoneal and various surface lesions of different organs inside the peritoneal cavity and provision for biopsy under direct vision. Diagnostic Laparoscopy was performed in 50 patients (100%). Diagnostic Laparoscopy could accomplish proper staging in 48 cases (96%) i.e. the sensitivity of DL is 0.96 and specificity of test being 1. Unnecessary and futile laparotomies were avoided in 20 patients (40%). Only 2 patient (4%) had to subjected to laparotomy following DL and found to be unresectable. Morbidity & mortality are found to be very low in patients undergoing only Diagnostic laparoscopy. DL was associated with decreased morbidity & pain, faster recovery & quicker initiation of adjuvant therapies.

MATERIALS AND METHODS

This study contains 50 patients, 33 males and 17 females. The cases for the study were taken from patient admitted to Bhima Bhoi Medical College & Hospital, Balangir, Odisha, Department of General Surgery during the study period from september 2018 to November 2022.

Inclusion Criteria
1. Patient age >18 year
2. Histopathologically proved or clinically & radiologically suspected malignancies requiring laparotomy.
3. Patients with peritoneal seedings and hepatic metastasis not detected on others method of imaging modalities.
Exclusion Criteria
1. Non resectability on imaging modalities like CT Scan.
2. Patient having other than gastrointestinal malignancies.
3. Patient unfit for anaesthesia. Investigations: All patients with gastrointestinal malignancies following investigations done as required: Haematological – Hb%, DC, TLC. Biochemical – RBS/FBS, Serum Urea & creatinine, S-electrolytes, LFT Radiological – X-ray abdomen and chest, ultrasound abdomen and pelvis, Upper and lower GI endoscopy with CT scan as per requirement. Finally Diagnostic Laparoscopy done.

RESULTS

During 4 years of study period from September 2018 to November 2022 in total of 50 new cases of gastrointestinal malignancies Diagnostic laparoscopy done after thorough clinical, radiological & histological investigations.
The maximum no of cases was 61-70 age group followed by 51-60 and then by 41-50 age group. Mean age for group being 53 years. There were 23 Male (46%) & 27 Female (54%) patients in the study which is comparable. The youngest male patient was of 21 years & female was 26 years. The oldest male & female were 70 years. The mean age of male: female were 53.4: 52.6 respectively. Our Patients ranged from 21-70 years with mean age being 53 years. Maximum patients in our study were in age group 61-70 followed by 51-60 and 41-50 years. Gastrointestinal malignancies increasing with age. It is similar to that seen in other studies. Ozmen MM et al.[1] study comprised patients ranging from 26 – 72 years (mean 54.5) with 26 males and 22 females. Chandramohan K. Nair et al.[1] study comprised 41 patients ranging from 20 to 75 year (mean 50 years) with 22 males and 19 females. Sreeharsa MV et al.[3] study comprises 30 cases ranging from 21 to 70 years (mean age 53 years) with 13 male and 17 female patients. Age group studied was found to be in accordance to other studies.

Case distribution according to site of tumor: Stomach malignancies constituted 27 (54%) cases, Colorectal 15 (30%), Gall bladder 5(10%) and rest 3 (6%) cases by pancreas malignancies our study. Muntean V et al 4 study comprised 119 cases with Stomach tumours were 45 (37.8%), 20 (16.8%) cases colon and only 4 cases of biliary tract tumours. Sreeharsa MV et al 3 study comprised 41 cases. Only 15 cases (50%) are stomach, 13(43%) colorectal and 2 (7%) are gall bladder tumours. Liver metastases: Only 15 cases (30.0%) had liver metastasis. Ozmen MM et al.[1] study showed liver metastases in 18 (33.3%) cases. Sreeharsa MV et al.[3] study reveals liver metastasis in 6(20%) cases out of 30 patients. Peritoneal Nodules: Totally out of 50 cases, 7 cases (14%) had peritoneal nodules. 4 cases from stomach and 2 from colorectal & 1 case from gall bladder malignancy. Muntean V et al.[4] study revealed peritoneal seeding in 32 (32.3%) cases & in 1 case of colon malignancy out of 20 cases. Sreeharsa MV et al.[3] study found 8(26.7%) cases of peritoneal metastasis.

Table 1:

<table>
<thead>
<tr>
<th>Age groups in years</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>31-40</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>41-50</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>22%</td>
</tr>
<tr>
<td>51-60</td>
<td>9</td>
<td>5</td>
<td>14</td>
<td>28%</td>
</tr>
<tr>
<td>61-70</td>
<td>7</td>
<td>11</td>
<td>18</td>
<td>36%</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>27</td>
<td>50</td>
<td>100%</td>
</tr>
</tbody>
</table>
Done only in 45 cases excluding unrectsectable Gall bladder malignancy for laparotomy. Out of which 1 body and 1 lower rectal mass could not be assessable for resection which was appears to be resectable in diagnostic laparoscopy. So, undergone for palliative procedure. Only 28 resectable cases on laparotomy out of 30 cases appears to be resectable on diagnostic laparoscopy and 15 cases were found to be unresectable on laparotomy in equivalent with diagnostic laparoscopy, On Diagnostic laparoscopy, in our study 30 cases deemed resectable & 20(40%) unresectable. These patients were prevented from unnecessary exploratory laparotomy. Muntean V et al.[4] in his study had 36 (36.4%) patients avoided unnecessary laparotomies. Hemming AW et al.[5] in their study feel that laparoscopic staging in intra-abdominal malignancies is of value & will prevent up to 36% of futile laparotomy, Sreeharsa MV et al,[3] study found 43.3% (13 cases) were prevented from unnecessary laparotomy, 40% prevented from unnecessary laparotomy which was higher than most of other studies probably as the patients in our study group are not very well educated and present in the later stage of disease. Most of the patient found to be unresectable did not had severe obstructive symptoms and thus present later in the disease stage. Further 12 cases of stomach malignancies to be unresectable out of total 20 cases(60%) as Tumour in body of stomach present in later stages of disease as patient does not develop prominent obstructive symptoms seen in fundic or prepyloric tumours. 1 cases of pre-pylocic humour & 1 fundic humour were found to be unresectable. Muntean V et al,[4] found 26 cases of stomach cancers unresectable on Staging laparoscopy out of total 45 cases(57.77%). Asencio F et al,[6] found laparotomy was abandoned in 41% of patients after laparoscopic staging. In our study 15 cases of colorectal malignancies out of which only 1(6.66%) case of lower rectal tumour was found to be unresectable on Staging Laparoscopy and thus avoided unnecessary laparotomy. Total 30 cases were found to be resectable on Staging Laparoscopy out of which 28(93.33%) cases underwent definitive procedure. 2 case (6.66%) was found to be unresectable on laparotomy which was not found on Staging Laparoscopy due to infiltration into the pancreas. One case of unresectable colorectal tumour underwent colostomy & other 13 unresectable cases underwent palliative procedure. 8 cases underwent only laparoscopic biopsy. Totally 13 cases underwent Palliative procedure, 1 patient underwent colostomy and rest of 8 unresectable case undergone only laparoscopic biopsy for tissue diagnosis. Thus 20(40%) cases out of 50 were prevented from undergoing unnecessary exploratory laparotomy.

Complications of DL: 2(4%)cases had minor complication of wound sepsis and no major complication or mortality.

**DISCUSSION**

- Diagnostic Laparoscopy was performed in 50 patients (100%).
- Diagnostic Laparoscopy could accomplish proper. staging in 48 cases (96%) i.e. the sensitivity of DL is 0.96 and specificity of test being 1.
- Unnecessary and futile laparotomies were avoided in 20 patients (40%).
- Only 2 patient (4%) had to subjected to laparotomy following DL and found to be unresectable.
- Morbidity & mortality are found to be very low in patients undergoing only Diagnostic laparoscopy.
- DL was associated with decreased morbidity & pain, faster recovery & quicker initiation of adjuvant therapies.

**CONCLUSION**

Diagnostic laparoscopy holds a unique place in the array of modalities though various procedure available to diagnose and stage gastrointestinal malignancies. Diagnostic laparoscopy scores over other imaglelogy in identifying peritoneal and surface lesions within the peritoneal cavity and for taking biopsy under direct vision such as trucut biopsy, cup forceps biopsy & Cytological washing. laparoscopic ultrasound of minimally invasive surgery to identify
Occult metastasis in liver, peritoneum and solid organs which are difficult to visualize. Even smaller than 1cm can be identified, biopsy and ablated. A short DL just before planned surgical procedure is found to be safe & very effective. Diagnostic Laparoscopy found to be more useful in assessing operability in gastric & extra hepatic biliary tumour & also provides additional information regarding extent of the disease intra-abdominally which changes the course of management and had a significant impact on decisions regarding the treatment plan in patients. It helps in more careful planning of palliative & resectional procedure in advanced malignancies. It added benefit of performing biopsy & having histological confirmation from sites of dissemination. Diagnostic Laparoscopy prevent patients from unnecessary laparotomies and associated with decreased morbidity & faster recovery and earlier time to start adjuvant trea. Diagnostic laparoscopy should be a routine tool for all surgeons performing surgeries on gastrointestinal malignancies.

REFERENCES