ABSTRACT: BACKGROUND: 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. Patients with chronic abdominal pain (CAP) can undergo numerous diagnostic tests with failure to detect any structural or biochemical abnormality. This study was undertaken to assess the diagnostic and therapeutic role of laparoscopy in patients with unexplained chronic abdominal pain (UCAP). PATIENTS AND METHODS: Diagnostic laparoscopy was performed for 100 patients with UCAP not diagnosed by usual clinical examination and investigations. The pain in all patients was of unclear etiology despite all the investigative procedures. All patients were subjected to laparoscopic evaluation for their conditions. The findings and outcomes of the laparoscopy were recorded and analyzed. RESULTS: UCAP is common in females (62%) than in males. The most frequent laparoscopic findings detected were abdominal adhesions (30%), followed by pelvic inflammatory disease (25%), abdominal tuberculosis (12%), chronic appendicitis (8%), mesenteric lymphadenitis (5%) and diverticulosis (2%). In 18% of cases no identifiable cause could be found. Follow after 2 months revealed pain relief in 84% irrespective of cause of pain. CONCLUSION: Laparoscopy is an effective diagnostic and therapeutic modality in the management of patients with chronic abdominal pain. KEYWORDS: Chronic abdominal pain, diagnostic laparoscopy, chronic appendicitis, adhesions
been tried in previous studies. (17–19) Laparoscopy can identify abnormal findings and improve the outcome in a majority of patients with chronic abdominal pain, as it allows surgeons to see and treat many abdominal conditions that cannot be diagnosed otherwise. (18) It is a safe and effective tool and can establish the etiology and allows for appropriate interventions in such cases. (20) Abdominal adhesions are the most likely findings, especially in patients with a past history of abdominal operations. (21) Other findings such as appendiceal pathology, hepatobiliary causes, and endometriosis can be discovered and dealt with. (17) However, the role of laparoscopy in chronic abdominal pain is still debated by some authors who deny its value in adhesiolysis and consider it controversial and not evidence-based, and therefore, do not recommend it as a treatment for adhesions in patients with chronic abdominal pain. (22,23) In the present study we aim to evaluate the use of the laparoscope in the diagnosis and management of patients with chronic abdominal pain.

Laparoscopic surgery is a method in which the peritoneal cavity can be visualised without making large surgical incisions.(24) It has modified the management of many surgical diseases.(25) Diagnostic laparoscopy is now accepted as the preferred primary approach to many disease processes.(26).

PATIENTS AND METHODS: Total 100 patients with history of nonspecific abdominal pain for 6 months were included in this prospective study. Study was conducted in the department of surgery VCGGMS & RI between March 2010 to March 2013. The pain in all patients was of unclear etiology despite all the investigative procedures. Patients under 16 yrs of age and having previous laparotomy were excluded from the study. After taking history and clinical examination, relevant blood investigations, x-ray abdomen and ultrasound were performed. A proforma was used to record the socio-demographic data of the patients along with clinical findings, investigations, laparoscopic findings, diagnosis, and complications. All patients were subjected to laparoscopic evaluation for their conditions. The findings and outcomes of the laparoscopy were recorded and analyzed. Outcome measures included diagnosis made, duration of surgery, duration of hospital stay and postoperative complications. Data was analysed by using SPSS Version 15. Descriptive statistics like frequency, percentage, mean etc. were calculated.

RESULTS: Mean age of the patients was 34.42±2.56 years. More than half of the patients studied were females (62%). The mean duration of pain was 9.5±2.4 months. The most common site of pain was the periumbilical region (35%) followed by the right lower abdominal quadrant (25%). All patient characteristics are summarized in table 1.

<table>
<thead>
<tr>
<th>Characters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>34.42±2.56</td>
</tr>
<tr>
<td>Females</td>
<td>62%</td>
</tr>
<tr>
<td>Males</td>
<td>38%</td>
</tr>
<tr>
<td>Site of pain</td>
<td></td>
</tr>
<tr>
<td>Periumbilical</td>
<td>35%</td>
</tr>
<tr>
<td>Right lower quadrant</td>
<td>25%</td>
</tr>
<tr>
<td>Left lower quadrant</td>
<td>20%</td>
</tr>
</tbody>
</table>
The mean operative time was 55 ± 15 minutes. There was no case converted to open procedures. Out the 100 patients with chronic abdominal pain, a definitive diagnosis was established in 82 patients (82%), while no identifiable cause could be reached in 18 (18%).

The most common laparoscopic findings were adhesions (30%). Other findings included pelvic inflammatory disease (25%), abdominal tuberculosis (12%), chronic appendicitis (8%), mesenteric lymphadenitis (5%) and diverticulosis. (2 %) Table 2 summarizes the laparoscopic diagnoses assigned to all patients.

<table>
<thead>
<tr>
<th>Findings</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative time (mean±SD)</td>
<td>55 ± 15 minutes</td>
</tr>
<tr>
<td>Laparoscopic findings</td>
<td></td>
</tr>
<tr>
<td>Adhesions</td>
<td>30%</td>
</tr>
<tr>
<td>Pelvic inflammatory disease</td>
<td>25%</td>
</tr>
<tr>
<td>Abdominal tuberculosis</td>
<td>12%</td>
</tr>
<tr>
<td>Chronic appendicitis</td>
<td>8%</td>
</tr>
<tr>
<td>Mesenteric lymphadenitis</td>
<td>5%</td>
</tr>
<tr>
<td>Diverticulosis</td>
<td>2%</td>
</tr>
<tr>
<td>Post operative hospital stay</td>
<td>1.8±1.4 days</td>
</tr>
</tbody>
</table>

Table 2: Operative findings of patients

Laparoscopic management included adhesiolysis (26%), lymph node or peritoneal biopsy (17%) and appendectomy (8%), 31 patients had no interventions performed.

Mean postoperative hospital stay was 1.8±1.4 days. In most cases no postoperative complications had been reported except in five cases (two cases showed bleeding and three cases showed infection). The bleeding could be dealt with through electrocautery and infection was dealt with proper antibiotics.

After 2 months of follow up 40 patients had complete relief from pain while 46 patients had decrease in pain score. Rest 14 patients showed no improvement in pain.

**DISCUSSION:** Chronic abdominal pain, defined as pain reported for a minimum period of 6 months and is affecting the daily life activities of the patients. Diagnosis and treatment plane in patients with CAP is usually difficult and frustrating. When no cause can be identified it is called unexplained chronic abdominal pain (UCAP). It is one of the most common surgical symptoms, and among the most challenging problems facing the physician (27). Abdominal pain was the third most common pain complaint of individuals enrolled in a large health maintenance organisation (28).

One hundred patients with chronic abdominal pain of no obvious cause or uncertain diagnosis were evaluated laparoscopically, to determine the underlying cause of pain and possible
management. Laparoscopic examination revealed normal abdominal anatomy with no pathologic lesion in 18 patients (18%) whereas in 82 patients (82%) some abdominal or pelvic pathology was found. This figure coincides with the laparoscopic study of Marana and his coworkers (28).

The most frequent abdominal pathology detected in our study were abdominal adhesions in 30%. Tiwari and Peters (29) and Di lorenzo and colleagues (30), reported an incidence of 31.5% and 18.6% respectively. It has been found that pain is located in the area of adhesions in 90% of cases, although there is no correlation between the severity of pain and extent of adhesions (31). Adhesions will cause CAP if it restrict the mobility or distensibility of abdominal organs especially the bowel (32).

Pelvic inflammatory disease (PID) was the second most common cause of UCAP and incidence was 25%. Among females it was the most common cause (40.3%). High incidence of PID in our study was consistent with the findings of Gowri and Krolikowski.(33) Abdominal tuberculosis was 12 % of patients and the incidence was higher than that of western studies this reflects higher incidence of tuberculosis in developing countries.

In our study chronic appendicitis was the cause of nonspecific CAP in 8 patients (8%) all were managed by laparoscopic appendectomy, complete relief of pain was observed in all. Raymond and his colleagues (34) reported 15.7% chronic appendicitis, with improvement of pain in 90% of the patients. Mesenteric lymphadenitis was found in 5% of cases and may be due to infectious cause of bowel like colitis, gastroenteritis or enteric fever.

We found that in a selected patient group, laparoscopic evaluation of unexplained chronic abdominal pain is usually associated with a positive outcome (86%) in terms of less or no pain, after two months of laparoscopy. This finding is justified in many previous studies, (17 and 20) however; the role of laparoscopy from the therapeutic point of view is still ignored by some authors, especially its role in adhesiolysis. (22, 23)

CONCLUSIONS: Diagnostic laparoscopy in CAP with unknown etiology is a significant examination tool which increases our understanding of many underlying abdominal disorders. However it should be undertaken only after a complete diagnostic evaluation has been carried out. It is not only diagnostic but also considerably therapeutic irrespective of etiology of pain.

REFERENCES:

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