Efficacy of Laparoscopy in Diagnosis and Treatment of Chronic Abdominal Pain of Unknown Origin


Keck Medical Center of USC, Department of Surgery, Los Angeles, CA, USA

Background/Objective
Chronic abdominal pain is a clinical problem with a broad differential diagnosis that is commonly encountered by primary care physicians and specialists. Often, patients are referred for surgical evaluation following multiple imaging studies, hospitalizations and clinic visits, having undergone long periods of uncertainty and extensive testing without a definitive diagnosis. A growing body of evidence is demonstrating that patients may benefit from the use of diagnostic laparoscopy as an early intervention.

Diagnostic laparoscopy (DL) allows for direct visualization of the peritoneal space and intraabdominal organs and is considered a low risk procedure with a very low complication rate [2,3]. Serious and possibly fatal complications include bowel perforation at a rate of 0.23 percent and major vascular injury at 0.25 percent [3,4]. The current literature shows that an organic cause was found during DL in 68-86.5 percent of cases, with 70-90 percent of cases resulting in improvement or resolution of the pain even if an organic cause was not found. This suggests a need for greater analysis of this patient population in order to investigate the possibility of incorporating DL as a therapeutic option in cases of chronic abdominal pain of unknown origin. The goal of our study is to review our own institutional data on DL as a diagnostic and therapeutic modality for the evaluation of the chronic abdominal pain patient.

Materials and Methods
A retrospective chart review was performed on patients who underwent diagnostic laparoscopy for chronic abdominal pain with a known etiology at either Keck Medical Center or Verdugo Hills Hospital between August 2007 and December 2017. Chronic abdominal pain was defined as abdominal pain of unknown origin.  The study was approved by the institutional review board of the University of Southern California.

Results
Of the 28 patients included in this study, 68% were female, 32% male, with an average age of 47.40 years at laparoscopy (SD=16.58). In terms of past medical history, the five most common conditions were GERD (25.00%), hypertension (21.43%), obesity (14.29%), small bowel obstruction (14.29%), major depression (10.71%), and fibromyalgia (7.14%). In addition, at the time of their procedure, 32.1% were on anti-depressant medications, 25.0% on antidepressants (SSRIs, SNRI's, Bupropion), asthma medication, 17.9% on non-opioid pain medication, 10.7% on tricyclic antidepressants, and 7.1% on immunosuppressants. 89.29% of patients had a history of abdominal or pelvic surgery with 42.86% having history of open surgery and 82.14% having history of laparoscopic surgery. The mean number of procedures per patient was 0.93 and 2.00 for laparoscopic surgeries.

We found that DL yielded a positive finding in 92.86% of cases, which is consistent with the literature with reported rates between 68 and 85.5 percent. The most common finding on laparoscopy was adhesions, which were found in 60.71 percent of cases. Of those patients who underwent laparoscopy, 68% were female, 32% male, with an average age of 47.40 years at laparoscopy (SD=16.58). In terms of past medical history, the five most common conditions were GERD, hypertension, obesity, small bowel obstruction, and major depression.

An overwhelming majority of patients were satisfied with their postoperative outcomes and would undergo the procedure again. Interestingly, two out of the three patients who continued to experience pain after laparoscopy were satisfied with their postoperative outcomes. A summary of patient responses to postoperative follow-up is shown in Table 1.

Discussion
We conclude that laparoscopy is an efficacious diagnostic and therapeutic tool in managing chronic abdominal pain of unknown origin. The use of DL as an early diagnostic modality in the evaluation of chronic abdominal pain patients is warranted. Added therapeutic effects may decrease the use of unnecessary testing and potentially narcotic use.

Conclusion
Our study corroborates previously published literature supporting the use of laparoscopy as an effective and efficacious diagnostic and therapeutic tool in managing chronic abdominal pain of unknown origin. The use of DL as an early diagnostic modality in the evaluation of chronic abdominal pain patients is warranted. Additional therapeutic effects may decrease the use of unnecessary testing and potentially narcotic use.

Table 1: Postoperative Phone Survey
Summary of patient responses to postoperative phone survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Answered Yes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you undergo this procedure again with your outcome in mind?</td>
<td>80.0</td>
</tr>
<tr>
<td>Abdominal surgical interventions concerning chronic abdominal pain since diagnostic lap?</td>
<td>0</td>
</tr>
<tr>
<td>Have you had any new diagnosis regarding your abdominal pain since laparoscopic surgery?</td>
<td>80.0</td>
</tr>
<tr>
<td>Was there any improvement in your abdominal pain after the diagnostic laparoscopy?</td>
<td>0</td>
</tr>
<tr>
<td>Are you taking any medications for your abdominal pain?</td>
<td>30.0</td>
</tr>
<tr>
<td>Narcotic use prior to diagnostic lap?</td>
<td>40.0</td>
</tr>
<tr>
<td>Narcotic use after diagnostic lap?</td>
<td>10.0</td>
</tr>
<tr>
<td>Are you satisfied with your postoperative outcomes?</td>
<td>90.0</td>
</tr>
</tbody>
</table>

Figure 1: Illustration of a Diagnostic Laparoscopy
A camera is introduced through an abdominal wall incision into the abdominal cavity, followed by insufflation which allows for direct visualization of the abdominal organs.

Reference