The therapeutic value of elective laparoscopic appendectomy in the management of chronic abdominal pain

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Chronic recurrent abdominal pain is among the most devastating symptoms for both patient and physician. Despite the suffering from a real annoying pain, physicians usually cannot find any other abnormality, and the patients express that everything is all right. The introduction of new diagnostic methods and better knowledge of functional abdominal pain and more attention to the abdominal wall as the possible source of pain, has decreased the number of these patients in recent years, but there are still patients who suffer from chronic abdominal pain for which no apparent cause could be found.[1] Laparoscopy has been used as both the diagnostic and therapeutic measures for these patients with variable results.[1]

We designed this prospective study to find the role of this procedure in the evaluation and possible treatment of these patients in our center.

In a prospective study from May 2002 to July 2004, all patients with chronic abdominal pain (more than 6 months) and without any identifiable cause in their previous evaluations underwent laparoscopic evaluation. The Shiraz University of Medical Sciences Ethics Committee approved the study, and each participants gave an informed written consent after clear explanation of the risks and possible benefits of laparoscopic evaluation of the abdominal cavity. Aside from careful history and physical examination by a gastroenterologist, we evaluated all patients by upper endoscopy, colonoscopy and abdominal and pelvic sonography, which were normal or inconclusive. Routine blood tests including complete blood count, erythrocyte sedimentation rate, C-reactive protein, liver function test, and amylase had to be normal during the episodes of abdominal pain. We excluded from the study patients with known underlying disease, including asthma with chronic steroid therapy, chronic renal failure, coronary artery disease, congestive heart failure, diabetes mellitus, cirrhosis, any neuropsychiatric disorder, those with prior surgery, and pregnant or lactating women. We also excluded patients who fulfilled the Rome II criteria for irritable bowel syndrome and for functional dyspepsia. All patients underwent general anesthesia with orotracheal intubation. We carried out a laparoscopic evaluation of the abdominal cavity with insertion of 3 ports into the abdominal cavity (2 10 mm ports in the supra-umbilical and suprapubic areas and a 5 mm port in the McBurney point). We noted the laparoscopic findings, and performed standard appendectomy for all patients. We sent the appendix for histopathological evaluation. We used the autopsy findings of 80 age and gender matched car accident victims during the same period as the control group and sent the appendixes for histopathological evaluation. The pathologist was blind to the study. We analyzed and computed all the data by SPSS (Chicago, IL) software, version 10, and MS EXCEL (Microsoft, Redmond, WA) software. We used the Fisher exact test for statistical analysis. We expressed values as mean ± SD. We considered a *p*-value of less than 0.05 as significant.

Among the 80 patients, there were 48 males and 32 females (mean age 38 ± 2 years; range 16-67 years). All patients had suffered from recurrent

Table 1 - Laparoscopic and pathologic findings in 80 patients with recurrent abdominal pain and 80 control group patients.

Diagnostic tool	Findings	Chronic pain	Control group	*p*-value
Laparoscopic findings	Appendix fibrosis	12	-	-
	Appendicular phlegmon	4	-	-
	Inflamed appendix	36	-	-
	Ovarian cyst	28	-	-
Pathological findings	Moderate inflammation with evidence of chronicity	32	4	< 0.05
	Fibrosis	20	4	< 0.05
	Follicular hyperplasia	12	4	< 0.05
	Non-specific changes	16	12	NS

NS - not significant

abdominal pain for a median duration of 11 months (range 6-36 months). Other symptoms included nausea in 23%, anorexia in 19% and constipation in 15% of patients. **Table 1** shows the laparoscopic and pathologic findings. All patients had uncomplicated hospital courses, with the mean hospital stay of 1.5 ± 0.5 days (range of 1-4 days). The mean follow up time was 5.5 ± 0.6 months. All patients were symptom free, except one lady who suffered from one episode of abdominal pain after 3 months postoperatively, which was secondary to ruptured ovarian cyst. **Table 1** also shows the autopsy findings in the control group. Abnormal findings were significantly more prevalent in the case group ($p<0.05$).

We consider recurrent abdominal pain to be a significant problem. Chronic appendicitis and diverticula of appendix are unusual causes of abdominal pain, which may be a significant diagnostic problem.[2] Clinical presentation mostly determines the cause of pain, but in a significant number of patients, the cause remains unclear.[1-3] Laparoscopic evaluation is a safe and beneficial method for decision making, and it may be a good tool for evaluation of appendicular masses before planning a surgical program.[4] In a study carried out by Agarwala and Liu,[4] they evaluated 1,317 women with chronic recurrent abdominal and pelvic pain with laparoscopy, and reported the abnormal findings of appendix to be endometriosis, acute appendicitis, carcinoid tumors, large mucocele, *Enterobius vermicularis* infection, benign neuroma, mucous cystadenoma, obliterate of appendicular lumen, and fibrous adhesions. Thirty percent of the cases had normal appendix, in whom pain regressed post appendectomy, and therefore, the appendix was the key organ for abdominal pain.[4] Our study also showed that the most common finding in patients who underwent laparoscopic evaluation due to chronic abdominal pain was related to the appendix. Laparoscopy has been reported to be a safe and effective utility in chronic abdominal pain by several authors.[1-5] Laparoscopy alone can also reveal the pathologic condition of patients with pain of unknown origin.[5] In our study, all patients benefited from laparoscopic evaluation and appendectomy.

In conclusion, laparoscopic evaluation may be a safe method for evaluation of patients experiencing chronic or unknown abdominal pain and we recommend its use in the evaluation and treatment of chronic abdominal pain.

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References

1. Moberg AC, Ahlberg G, Leijonmarck CE, Montgomery A, Reiertsen O, Rosseland AR, et al. Diagnostic laparoscopy in 1043 patients with suspected appendicitis. ***Eur J Surg*** 1998; 164: 833-841.
2. Majeski J. Diverticulm of the vermiform appendix is associated with chronic abdominal pain. ***Am J Surg*** 2003; 186: 129-131.
3. Gibeily GJ, Ross MN, Manning DB, Wherry DC, Kao TC. Late presenting appendicitis: a laparoscopic approach to a complicated problem. ***Surg Endosc*** 2003; 17: 725-729.
4. Agarwala N, Liu CY. Laparoscopic appendectomy. ***J Am Assoc Gynecol Laparosc*** 2003; 10: 166-168.
5. Paulson EK, Kalady MF, Pappas TN. Clinical practice. Suspected appendicitis. ***N Engl J Med*** 2003; 348: 236-242.

Evaluation of wood's light and direct smear for diagnosis of pityriasis versicolor and erythrasma

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Erythrasma and pityriasis versicolor (PV) are 2 infectious skin diseases of young adults. However, PV can be seen in elderly people and occasionally in children.[1] There are various diagnostic methods including direct smear, scotch tape test and Wood's light.[2,3] Although, in most studies and texts[2-5] there is emphasis on the high diagnostic value of Wood's light but, some studies reject the diagnostic value of Wood's light.[1]

In order to evaluate routine laboratory methods of direct smear and Wood's light; the study was undertaken over a 16 months period (September 2003-December 2004), at the Departments of Mycology and Dermatology, Emam Reza Hospital, Mashhad, Iran. The study population was the patients and volunteer students from Mashhad University of Medical Sciences who referred to Dermatology Clinic, Emam Reza Hospital. Among 215 individuals, 88 patients had skin lesions suspected for PV and 127 for erythrasma. After clinical diagnosis for PV and erythrasma a questionnaire was completed for each patient, they were asked to refer to the Mycology laboratory at Emam Reza Hospital. All of the patients were tested by Wood's light in a dark room. Fresh smear by potassium hydroxide (10%) was prepared for diagnosis of PV and direct stained smear by methylene blue for erythrasma. The common sites of lesions in patients suffering from PV were trunk and neck. Among 88 individuals suspected to PV, 55 patients (62.5%) showed positive golden yellow fluorescence under Wood's light, while 59 patients (67%) had positive direct smear. Among 127