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Role of elective laparoscopic appendicectomy for chronic right lower quadrant abdominal pain

Dr.A.Affee Asma[1], Dr.G.Kannan[2]
(Department of General surgery, Madras medical college, Chennai, India)
Corresponding Author: Dr.A.Affee Asma

Abstract : ***Backround :*** *Chronic right lower quadrant abdominal pain is still a diagnostic challenge. When other pathologies are ruled out and conservative modalities fail, elective laparoscopic appendicectomy has got a definitive role in this subset of patients.****Aim :*** *To study the role of elective laparoscopic appendectomy for chronic or recurrent right lower quadrant pain .****Methodology :****It is a prospective and observational study which includes patients with chronic or recurrent right lower quadrant pain for more than three months in Rajiv Gandhi Government General Hospital during the time period of Jan 2015 to Sep 2015..After laparoscopic appendicectomy patients were followed up at 6 weeks and 3 months and a pain score was assigned. Histopathology of removed appendix was also analysed.* ***Results:****40 patients (80%) showed relief of pain and 8 patients (16%) showed remarkable pain relief , while 2 patients (4%) still complained of right lower quadrant pain after 6 weeks. 45 patients (90%) showed relief of pain and 5 patients (10%) complained of right lower quadrant pain persistence after 3 months. 12 patients (24%) had acute features of inflammed appendix, 14 patients (28%) had chronic histopathological features and 24 patients (48%) had normal features****Conclusion:*** *In patients with chronic right lower quadrant abdominal pain, elective laparoscopic appendectomy could be an effective therapeutic procedure in properly selected patients. Histopathological findings of the removed appendix does not contribute in establishing the diagnosis in these patients*

Keywords : *Acute appendicitis, Chronic right lower quadrant pain, chronic appendicitis, Laparoscopic Appendicectomy,Pain score*

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I. Introduction

Chronic right lower quadrant abdominal pain can be diagnostic challenge. These patients are seen by a lot of different physicians and the surgeons are consulted at last after other modalities have failed to provide resolution of their symptomatology.

The recent advances in laparoscopic surgery provides precise visual assessment of intra abdominal conditions for diagnosis and prompt intervention . It has a significant diagnostic and therapeutic role in patients with chronic right lower quadrant abdominal pain. In case of diagnostic uncertainty, laparoscopy may help to avoid unnecessary laparotomy, aids in planning surgical treatment by providing accurate diagnosis.

Laparoscopy allows us to treat various conditions of abdomen that could not be diagnosed otherwise. So diagnostic laparoscopy should be considered in patients presenting with chronic right lower quadrant abdominal pain, since it is minimally invasive, safe, efficacious, and invariably effective mode of diagnostic modality and can be performed rapidly with minimal sequelae and post – procedural pain.

II. Aims & Objectives

1. To study the role of elective laparoscopic appendectomy for chronic or recurrent right lower quadrant pain .
2. To study the relationship between clinical improvement and histopathological findings of removed appendix.

III. Methodology

Inclusion Criteria:

1. Patients with chronic or recurrent right lower quadrant pain for more than three months in whom routine investigations didn't reveal any pathology.
2. Age>18yrs
3. Patients should have experienced continuous pain or at least one pain in the month prior to inclusion.

Exclusion criteria:

1. Age < 18 yrs & > 60 yrs
2. Previous abdominal surgery

3. Known case of specific gastrointestinal, gynecological or urological diseases
4. Diagnostic laparoscopy reveals abnormalities other than those related to appendix

All patients who come under inclusion criteria and undergo laparoscopic appendicectomy for chronic lower quadrant abdominal pain in Institute of general surgery, Madras Medical College- Rajiv Gandhi Government General Hospital are selected. After getting ethics committee clearance, all patients were explained about the disease, benefits and possible side effects if the treatment. Detailed history was taken & clinical examination and laboratory tests performed. Patients were further evaluated as follows.

1. Radiological studies:
   USG – Abdomen and pelvis mainly to rule out the non intestinal causes of pain .
   Abdominal CT- For evaluation of extra – intestinal mass lesions and retroperitoneal lesion
2. Empirical interventions followed by Diagnostic laparoscopy
3. Assessment of Parameters following Laparoscopic appendicectomy are as follows.

Pain score after Laparoscopic appendicectomy at 6weeks and 3months

(i) Pain unchanged (or even worse).
(ii)Remarkable reduction of pain, but not completely pain free.
(iii)Completely pain free, no more right lower abdominal complaints.

Histopathology – Normal or having signs of appendicitis

STATISTICAL ANALYSIS RESULTS

Sex distribution

In our study, of a total population of 50 patients, 26 patients (52 %) are female and 24 patients (48%) are male.

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	26	52.0	52.0	52.0
Male	24	48.0	48.0	100.0
Total	50	100	100	

Age and sex distribution

In the study, the age group with maximum number of cases with chronic right lower quadrant pain was the 21 – 30 years , in both males and females , the total sum being 22 cases among the 50 cases , accounting to 44% of the total cases .

Pre – op symptoms

Of all the 50 patients (100%) had right lower quadrant abdominal pain and along with that 5 patients (10%) had fever and 6 patients (12%) had vomiting

Pain improvement after 6 weeks

40 patients (80%) showed relief of pain and 8 patients (16%) showed remarkable pain relief, while 2 patients (4%) still complained of right lower quadrant pain after 6 weeks.

	Frequency	**Percent**	**Valid percent**	**Cumulative percent**
1	2	4.0	4.0	4
2	8	16.0	16.0	20
3	40	80.0	80.0	100
	50	100	100	

Pain improvement after 3 months

45 patients (90%) showed relief of pain and 5 patients (10%) complained of right lower quadrant pain persistence after 3 months.

	Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
1	5	10.0	10.0	10.0
2	45	90.0	90.0	100.0
	50	100.0	100.0	

Histopathological features of removed Appendix.

12 patients (24%) had acute features of inflamed appendix, 14 patients (28%) had chronic histopathological features and 24 patients (48%) had normal features.

Null hypothesis	**Test**	**Significance**	**Decision**

Histopathology of the removed appendix is not related to the pain relief at 6th week follow-up	Independent samples Mann –Whitney U test	0.64552	Retains the null hypothesis

p value < 0.05 is significant .

Null hypothesis	**Test**	**Significance**	**Decision**
Histopathology of the removed appendix is not related to the pain relief at 3 month follow-up	Independent samples Mann –Whitney U test	0.50286	Retains the null hypothesis

p value < 0.05 is significant

1. Discussion

From our study, it has been shown that doing an appendectomy in patients presenting with chronic right quadrant pain is more likely to relieve the pain than in leaving the appendix in situ. Right lower quadrant abdominal pain was the chief complaint in all of the 50 patients (100%) and 5 patients (10%) had fever and 6 patients (12%) had vomiting. It has been identified that except chronic and recurrent right lower quadrant pain, no other clinical characteristics helps in establishing the diagnosis of chronic appendicitis, unlike in acute appendicitis. There were neither typical signs and symptoms nor routine diagnostic modalities to diagnose chronic appendicitis. In our study, no post – op complications or post – op deaths were encountered.

In our study, it shows that 40 patients (80%) had complete relief of right lower quadrant pain after 6 weeks after laparoscopy appendectomy and at the end of the 3 months after, 45 patients (90%) had complete relief but still 5 patients (10%) complained of right lower quadrant abdominal pain.

In Netherlands, a study was performed in a teaching hospital between Sep 1994 to Nov 2004 by Dr. R.M.H. Roumen and his colleagues. This study was a single center, double – blinded randomized control trail and patients with chronic right lower quadrant abdominal pain were evaluated. Of the 40 patients, 18 patients had undergone laparoscopic appendectomy and 22 patients had undergone diagnostic laparoscopy only. Six months after surgery based on pain score, they observed that in the appendectomy group higher proportion of patients had significant relief of pain than patient who underwent only diagnostic laparoscopy only. In patients who still had RLQ pain and appendix in situ, second time diagnostic laparoscopic procedure intended for appendectomy was done.

The secondary outcome was evaluated for the relationship between the clinical response and the appendiceal histopathology and concluded that the RLQ pain can be treated successfully by elective appendectomy in properly selected patients. Histopathology of the removed appendix does not contribute to the diagnosis. In the inspection only group, two patients had to undergo emergency appendectomy, indicating the risks and the economical burden of the patients .

In Fayez et al. study, 63 patients who had appendectomy for chronic RLQ pain were evaluated. In 92% of removed appendices, histopathological abnormalities were found and 95% patients were cured completely after appendectomy. This study concluded that the chronic appendicitis does exist as a separate entity and could be the cause of chronic RLQ pain.

Krone and Sperke analysed 1,718 prophylactic appendectomies during gynaecological operations. They found histopathological proof of acute appendicitis in 8 % and signs of chronic appendicitis in a whooping 65% and only in 21% were microscopically normal . The clinical relevance remains unclear in patients undergoing an`en passant appendectomy with a high percentage of pathological appendices. This lack of correlation between clinical pain score and histopathology suggests that there might be a non - inflammatory pain pathway.

But in a study by Dr. Popovic et al. between 1999 and 2000 published in the Croatian medical journal, out of 53 patients 41 underwent laparoscopic appendectomy. The study concluded that laparoscopic appendectomy had long – term results similar to the patients without appendectomy and also revealed that whether the removed appendix was normal or with pathological changes, the therapeutic results were similar. But based on the experience, they mentioned that the appendectomy must be performed, though there are no visible changes macroscopically due to changes intra – luminally. In our study 45 patients (90%) were rendered free from pain after laparoscopic appendectomy but 5 patients (10%) still complained of right lower quadrant abdominal pain.

Though the clinical data is convincing on pain relief after the appendectomy, the histopathological findings are tough to comprehend relating to this context and also no correlation between them. There is inconsistency between the symptomatology and histopathological findings.

2. Conclusion

In patients with chronic right lower quadrant abdominal pain, elective laparoscopic appendectomy could be an effective therapeutic procedure in properly selected patients. Histopathological findings of the removed appendix does not contribute in establishing the diagnosis in these patients. However strenuous efforts must be taken in pre – assessment of these patients, in order to identify patients who might benefit from the surgery. A definitive therapeutic procedure can be undertaken laparoscopically in most patients instead of resorting to open laparotomy.

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