Recurent "Chronic" Appendicitis; Is it a myth? Is Appendicectomy Indicated?

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Abstract
The existence of recurent "chronic" appendicitis and its treatment outcome are controversial. The aim of this study was to investigate its existence as an entity and to analyse its treatment outcome with appendicectomy.

Prospective study included patients with recurent "chronic" appendicitis admitted in Hilla General Teaching Hospital from 1992 through 2001 and submitted for appendicectomy. All patients were investigated by general urine analysis, full blood count, and abdominal ultrasonography. All appendices were examined grossly by the surgeon for evidence of chronic appendicitis. Histopathological examination was done for 17 (29.3%) patients and not all. Followed up period was for 2 to 6 years for disappearance of symptoms or appearance of other diagnoses. Out of 721 patients undergoing appendicectomy, 63 of them had recurent "chronic" appendicitis.

Follow up results for 2 to 6 years were possible in 58 patients, 32 (55%) females and 26 (45%) males. Age ranges from 6 years to 21 years with a mean of 13 years. Fifty-eight patients had abdominal pain and mild tenderness in the right iliac fossa. There were no significant changes on urinary analysis, full blood count or abdominal ultrasonography.

In 54 patients there were gross evidences of chronic inflammation in the appendix and the surrounding tissues. Histopathological examinations were assessed in only 17 (29.3%) patients and 16 of them had evidences of chronic inflammation with lymphoid hyperplasia, and 1 carcinoid tumour of the appendix. Postoperatively, 54 patients were without complications, 1 developed adhesive intestinal obstruction, 3 patients developed wound infection. There was no operative death. On follow up period 56 patients were completely pain-free and the other two patients showed moderate improvement and no patient developed a diagnosis other than what was presented to.

The study concluded that recurent "chronic" appendicitis does exist as a real entity and not a myth because some patients with appendiceal disease have atypical course, not exactly similar to classical picture of acute appendicitis and their appendices showed gross and microscopical evidence of chronic inflammation. In addition to that and because this study showed that significant number of these patients become symptom-free after appendicectomy, we believe that appendicectomy is a good treatment for this disease.
Introduction

Acute appendicitis is a well known clinical entity, but the existence of appendicitis as a chronic or recurrent illness is controversial, even some denied its existence [1-4]. Its incidence is not well known exactly but it ranges from 6.5% to 15% out of the appendices removed [5-7]. Its clinical features include recurrent abdominal pain and mild tenderness at the right lower abdominal quadrant and appendicectomy is planned after preliminary investigations, which are focused on exclusion of other significant diseases of similar features including functional disorders [8-10]. So, for these reasons we aimed to investigate its existence as an entity and outcome of its management by elective appendicectomy.

Patients and Methods

This prospective study includes patients with preoperative diagnosis of recurrent "chronic" appendicitis admitted in Hilla General Teaching Hospital from 1992 through 2001 and submitted for an elective appendicectomy. The diagnosis was warranted on history of recurrent abdominal pain and mild tenderness at the right lower abdominal quadrant with exclusion of other diseases of similar features including psychosomatic illnesses. All patients were investigated by general urine analysis, full blood Count, and abdominal ultrasonography. All appendices were examined grossly during surgery by the responsible surgeon for evidence of chronic inflammation in and around the appendix such as fibrosis and adhesion. Histopathological examination was done for 17 (29.3%) patients and not all. Follow up period was for 2 to 6 years which was concentrated on disappearance of symptoms or appearance of new diagnoses of other diseases.

Results

During ten-year period starting from January 1992 through December 2001, 63 patients were admitted with chronic appendicitis. They all were undergone appendicectomy. These were out of 721 patients undergoing appendicectomy for acute and recurrent "chronic" appendicitis. Follow up results for 2 to 6 years were possible to be evaluated in 58 patients, 32 (55%) were female and 26 (45%) were male. Age ranges from 6 years to 21 years with a mean of 13 years.

The main demographic findings of these patients are shown in Table 1.

Table 1 General demographic features of the patients

<table>
<thead>
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<th>n (58)</th>
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<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
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<tr>
<td>Mean age</td>
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The preoperative findings were: abdominal pain and mild abdominal tenderness in 58 patients (100%), the duration of symptoms before appendicectomy ranged between 3 months and 3 years, 52 (89.7%) had at least one episode of acute pain in the abdomen before consistent with acute appendicitis and managed by antibiotics and other non-operative
means (Table 2). There were no significant changes on urinary analysis, full blood count or abdominal ultrasonography. In 54 (93.1%) patients, there were gross (macroscopic) evidences of chronic inflammation in the appendix and the surrounding tissues such as fibrosis and adhesions.

**Table 2** Main diagnostic criteria

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<th>n(58)</th>
<th>Number</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Abdominal pain and tenderness</td>
<td>58</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Past history of acute appendicitis</td>
<td>52</td>
<td>89%</td>
<td></td>
</tr>
<tr>
<td>Gross evidences of chronic appendicitis</td>
<td>54</td>
<td>93.1%</td>
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Histopathological examination was assessed in only 17 patients and in 16 of them it showed infiltration of the appendix by chronic inflammatory cells with lymphoid hyperplasia, scarring and fibrosis and 1 carcinoid tumour of the appendix.

**Table 3** Histopathology of the appendices

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<thead>
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<th></th>
<th>Number</th>
<th>Percentage</th>
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<tr>
<td>chronic inflammation</td>
<td>16</td>
<td>94.2%</td>
</tr>
<tr>
<td>Carcinoid tumour</td>
<td>1</td>
<td>5.8%</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100%</td>
</tr>
</tbody>
</table>

Postoperatively, 54 (93.1%) patients were without complications, 1 (1.7%) patient developed adhesive intestinal obstruction which improved on conservative measures, 3 (5.1%) patients developed wound infection which were treated by drainage and antibiotics. There was no operative death. On follow up period 56 (96.5%) patients were completely pain-free and the other two patients showed moderate improvement and no patient tended to have emergence of new serious diseases. All patients with histological findings of chronic appendicitis were completely free of symptoms after appendicectomy.

**Discussion**

There are a lot of controversies about the existence of recurrent "chronic" appendicitis but now, in most of the literatures, it is a well-established clinical and pathological entity and usually it is considered in any patients with recurrent right lower quadrant abdominal pain with mild tenderness at MaCburney’s point, in the absence of another diagnosis[8-10]. In this study all patients gave history of recurrent abdominal pain for which they had several consultations to the emergency department. Pathologically it is regarded as a result of an acute appendicitis which had resolved with some non-operative treatment and then starts to run atypical clinical course with repeated attacks in the same individual[2, 11,12] which is consistent with this study because 52 (89.7%) patients remembered an attack of more severe pain before and received some type of non-operative treatment.

Its incidence varies from 6.5% to 15% out of the appendices removed [1,
In this study it included 63 patients (8.7 %) out of 721 removed appendices which is similar to other studies. But due to misuse of antibiotics in our practice, we may expect a higher incidence than this, and even some surgeons reached a conclusion that it should be considered in the differential diagnosis of any patients with repeated consultations due to recurrent abdominal pain [4, 13-15].

In all patients, gross examination of the appendices was done and in 54 out 58 patients, the appendix and the surrounding tissues showed gross evidences of chronic inflammation in the form of adhesions and fibrosis in and around the appendix which are considered sufficient for diagnosis of recurrent "chronic" appendicitis according to a study done by Mussack T, Schmidbauer et al and showed that macroscopic examination of the appendix by the surgeon resulted in a 93.5% specificity and a 77.8% sensitivity in diagnosis of recurrent "chronic" appendicitis (4) by finding adhesion and fibrosis in the appendix and surrounding tissues [16]. The other 4 patients who did not show gross evidences of chronic inflammation, their pain may be due to appendicular colic or the inflammatory changes might not be so prominent to be evident grossly [17]. The histopathological examination was done in 17 (29.3%) patients only and not all, 16 patients showed evidence of recurrent "chronic" appendicitis, 1carcinoid tumour of the appendix. All these 16 patients with chronically inflamed appendices were completely pain-free on follow up. The patient with carcinoid tumour was also free of symptoms and managed by follow up policy by the oncologist. Though this is a limitation of this study, but a lot of studies admitted that recurrent "chronic" appendicitis can be diagnosed easily grossly but this cannot replace pathological examination [4,18].

Interestingly, Meyer-Marcotty W and Plarre I. showed that two thirds of their patients with so-called clinical chronic appendicitis-like symptoms the clinical picture did not correlate with pathological-anatomical findings, even though, they recommended a strong indication for an operation when the condition is recurrent and other diseases are excluded.[3]

In this study, the postoperative follow up was the followings: 56 (96.5%) patients were completely pain-free and the other two patients showed moderate improvement and no patient tended to have emergence of new serious diseases. When this study is compared to a study by Stevenson RJ showed that forty-nine of the 50 patients were pain free at 1 year follow up [1,17], we find that they are of similar results with a statistical significance up to p value < 0.01. But appendicectomy should not be considered unless there are specific signs and symptoms of appendiceal disease, otherwise it will often be of no benefit [2, 19-22]

**Conclusion**

Because some patients with appendiceal disease have atypical course, not exactly similar to acute appendicitis, in a form of recurrent pain in the right lower abdominal quadrant and significant number of these patients become symptom-free after appendicectomy, we believe that recurrent "chronic" appendicitis does exist as a real entity and not a myth and appendicectomy is indicated for its management.

**References**

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