



Antibiotics for Appendicitis: Something to Think About?

Andrew Deytrikh and Samon Tou*

Department of Colorectal Surgery, Royal Derby Hospital, UK

Editorial

Since Claudius Amyand performed the first successful appendicectomy in 1735 in his role as surgeon in the English Army, this procedure has formed the bread-and-butter of the General Surgeons workload to date. Professional controversy has surrounded this otherwise well established practice in recent years, centred on the role of conservative (antibiotic) management for both uncomplicated and complicated appendicitis, and in interval appendicectomy. Moreover, the growing body of research into appendiceal neoplasms has created a clinically relevant focus for this debate.

Acute appendicitis is one of the commonest surgical pathologies, with a lifetime incidence of approximately 7-8% [1]. Treatment of uncomplicated appendicitis by antibiotic therapy alone has been the subject of a number of meta-analyses and systematic reviews in recent years. With negative appendicectomy rates in most institutions of around 20%, and a growing belief that a significant proportion of uncomplicated cases of appendicitis will resolve spontaneously, can it be defensible to proceed straight to operative management without a trial of antibiotic therapy if there is then an operative complication, particularly if the appendix is normal?

Conservative management has been shown to reduce complication rates from appendicitis when compared with appendicectomy, and is associated with faster recovery and reduced analgesic requirements [2]. However, greater treatment efficacy has been seen with operative management compared to antibiotic therapy. A Cochrane group review found 73% of patients treated with antibiotic therapy were free of complications or recurrence combined within 1 year compared to 97% in those who underwent appendicectomy at index admission [3]. In addition, the recent Appendicitis Acuta (APPAC) randomised trial found 1 year failure rates of between 25-30% in those patients treated conservatively [4]. However, these studies show significant heterogeneity which questions the validity of their findings, and certainly may not be applicable worldwide due to the non-uniform distribution of healthcare resources globally.

It is the cases of complicated appendicitis (gangrenous/perforated) which will often be considered for interval appendicectomy by the Surgeon, usually as a result of the presence of appendiceal mass. It is no new thing however, to question the practice of interval appendicectomy in favour of conservative management in these more challenging cases too. Studies have surmised that conservative management of patients with appendiceal mass is preferable to interval appendicectomy. One of the few prospective studies found recurrence rates of 10% [5], similar to that of the initial lifetime risk of appendicitis, and represent one argument for abandoning interval appendicectomy in preference of conservative management.

But what of the significance of appendiceal neoplasms? It is true to say that since their first description in 1882, appendiceal neoplasms remain rare. Carcinoid tumours are the most common primary malignant lesion of the appendix with an incidence of between 0.3 – 0.9% [6], and show a slight female predominance. The problem surgeons face in relation to appendiceal neoplasms is one of identification. One study (n = 7592) investigated the incidence of appendiceal carcinoids over 16 years, and found that they were not suspected in any patient before, nor identified at operation for appendicitis [7]. Appendiceal neoplasms remain, on the whole, an incidental diagnosis following surgery for suspected acute appendicitis. They are often small (< 1 cm), and more commonly located at the tip of the appendix, and as a result, pre-operative imaging has been ineffectual at identifying these lesions. [8]. It seems that despite advances in imaging and the move towards laparoscopic appendicectomy, the diagnosis of appendiceal neoplasia can only be reliably made on histological evaluation.

So for the surgeon undertaking an appendicectomy are there any patient factors or clinical features which may raise suspicion of an underlying neoplasm? A recent large scale study found that

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*Correspondence:

Samson Tou, Department of Colorectal Surgery, Royal Derby Hospital, Uttoxeter Road, DE22 3NE, UK, E-mail: samsontou@aol.com

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whilst the incidence of appendiceal neoplasms was only 0.5% at the index hospital admission, this increased to 12% for those undergoing interval appendicectomy, and rose further to 16% in patients over 40 [9]. The conclusion of these findings is that the patients at greatest risk are those over 40 with complicated appendicitis. In addition, the majority of the index neoplasms were small carcinoid tumours, whereas those removed at interval appendicectomy were more commonly mucinous in origin [9]. This has implications in terms of the proliferative index and risk of pseudomyxoma peritonei development. Of note, failure to remove the mesoappendix at time of operation may have implications in terms of clear margins and need for reoperation.

The practice of operatively managing appendicitis in both uncomplicated and complicated disease at either index admission or interval appendicectomy is being questioned in favour of conservative management. Indeed there are many advantages to this approach, namely lower cost and hospital admission days, low perforation rates, and the clinical complications associated with performing appendicectomies. However, appendiceal neoplasms remain an incidental finding, lacking clinical features, and it is possible to miss occult tumours in normal-appearing appendixes unless sent for histology. It is reasonable to leave it to the acumen of the responsible surgeon to select the cases where conservative management is appropriate, in the knowledge that a clinically relevant proportion of cases of complicated appendicitis in the over 40 age group represent neoplastic changes.

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