



# 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 appendectomy 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 appendectomy. 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 appendectomy 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 appendectomy, 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 appendectomy 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 appendectomy 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 appendectomy 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 appendectomy. 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 appendectomy 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 appendectomy, the diagnosis of appendiceal neoplasia can only be reliably made on histological evaluation.

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

## OPEN ACCESS

### \*Correspondence:

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

Received Date: 12 Oct 2016

Accepted Date: 06 Dec 2016

Published Date: 08 Dec 2016

### Citation:

Deytrikh A, Tou S. Antibiotics for Appendicitis: Something to Think About?. Clin Surg. 2016; 1: 1239.

Copyright © 2016 Samon Tou. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

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.

## References

1. Stewart B, Khanduri P, McCord C, Ohene-Yeboah M, Uranues S, Vega Rivera F, et al. Global disease burden of conditions requiring emergency surgery. *Br J Surg*. 2014; 101: e9-22.
2. Rocha LL, Rossi FM, Pessoa CM, Campos FN, Pires CE, Steinman M, et al. Antibiotics alone versus appendectomy to treat uncomplicated acute appendicitis in adults: what do meta-analyses say? *World J Emerg Surg*. 2015; 10: 51.
3. Wilms IM, de Hoog DE, de Visser DC, Janzing HM. Appendectomy versus antibiotic treatment for acute appendicitis. *Cochrane Database Syst Rev*. 2011; CD008359.
4. Salminen P, Paajanen H, Rautio T, Nordström P, Aarnio M, Rantanen T, et al. Antibiotic therapy versus appendectomy for treatment of uncomplicated acute appendicitis: The APPAC Randomized Clinical Trial. *JAMA*. 2015; 313: 2340-2348.
5. Kumar S, Jain S. Treatment of appendiceal mass: prospective randomized clinical trial. *Indian J Gastroenterol*. 2004; 23:165-167.
6. Goede AC, Caplin ME, Winslet MC. Carcinoid tumour of the appendix. *Br J Surg*. 2003; 90: 1317-1322.
7. Shapiro R, Eldar S, Sadot E, Venturero M, Papa MZ, Zippel DB, et al. The significance of occult carcinoids in the era of laparoscopic appendectomies. *Surg Endosc*. 2010; 24: 2197-2199.
8. Corsey CA, Nelson RC, Moreno RD, Dodd LG, Patel MB, Vaslef S, et al. Carcinoid tumors of the appendix: are these tumors identifiable prospectively on preoperative CT? *Am Surg*. 2010; 76: 273-275.
9. Wright GP, Mater ME, Carroll JT, Choy JS, Chung MH. Is there truly an oncologic indication for interval appendectomy? *Am J Surg*. 2015; 209: 442-446.