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Jamal Khalil AL-Qaisy
Assistant Professor, MBBS, Faculty of Medicine, AL- Iraqia University, Baghdad, Iraq

Correspondence
Jamal Khalil AL-Qaisy
Assistant Professor, Faculty of Medicine, AL- Iraqia University, Baghdad, Iraq

Conservative treatment of acute appendicitis, in patients refusing surgery

Jamal Khalil AL-Qaisy

Abstract
The incidence of appendicitis seems to have risen greatly in the first half of this century, particularly in Europe, America and Australasia, with up to 16% of the population undergoing appendicectomy. This is an study on 52 patients with acute appendicitis which refusing surgical interference from the period of 2014 to 2018. All patients completed a questionnaire including age, sex, occupation, residence, present symptoms and duration, previous medical and drugs history, previous surgical history, social history and family history. Clinical and physical examination were done to all patients. Completed all investigation including laboratory and radiological investigation, ultrasound, and the alvarado score were more than 7. All patients are admitted to the private hospital, and treated with antibiotic and intravenous fluid, with observational charts to all. Fifty two patients were studied, 40 male (76.92%) and 12 female (23.08%).The male to female ratio was 3.33:1. The age ranged from 15 to 35 years, with a mean age 25 years $\pm$ 5 years. Thirty six male patients (69.23%) and 10 female patients (19.23%) are responds to conservative treatment. Four male patients (7.69%) and 2 female patients (3.85%) not responds to conservative treatment after 48 hours and appendicectomy were done to them.
Conclusion: Acute non perforated appendicitis can be treated successfully with antibiotics. However, there is a risk of recurrence in cases of acute appendicitis, and this risk should be compared with the risk of complications after appendectomy.

Keywords: acute appendicitis, conservative, treatment

Introduction
The appendix is a narrow, muscular tube containing a large amount of lymphoid tissue. (Richrd S. Snell, 2007) [1]. The appendix varies enormously in length but in adults it is approximately 5–15 cm long. The base of the appendix arises from the posteromedial aspect of the caecum, however, the lie of the appendix itself is highly variable. In most cases the appendix lies in the retrocaecal position but other positions frequently occur (FIG 1). (Omar Faiz, 2002) [2]. and (FIG 2). (Patrick W, 2005) [4]. and (Fig 3). (Richard L. Drake, 2015) [5]. The appendix has the following characteristic features:-

- It has a small mesentery which descends behind the terminal ileum.
- The appendix has a lumen which is relatively wide in infants and gradually narrows throughout life, often becoming obliterated in the elderly.
- The teniae coli of the caecum lead to the base of the appendix.
- The bloodless fold of Treves (ileocaecal fold) is the name given to a small peritoneal reflection passing from the anterior terminal ileum to the appendix. Despite its name it is not an avascular structure**.** [Omar Faiz, 2002] [2]. The appendix has a complete peritoneal covering, and the mesoappendix contains the appendicular vessels and nerves. [Richrd S. Snell, 2007] [1]. The appendicular artery, a branch of the ileocolic artery, supplies the appendix. A tributary of the Superior Mesenteric Vein, the ileocolic vein, drains blood from the cecum and appendix. The lymphatic vessels from the cecum and appendix pass to lymph nodes in the mesoappendix and to the ileocolic lymph nodes that lie along the ileocolic artery. [Moore Keith L, 2006] [3]. The appendix is supplied by the sympathetic and parasympathetic (vagus) nerves from the superior mesenteric plexus. Afferent nerve fibers concerned with the conduction of visceral pain from the appendix accompany the sympathetic nerves and enter the spinal cord at the level of the 10th thoracic segment. [Richrd S. Snell, 2007] [1]. The appendix lies in the right iliac fossa, and in relation to the anterior abdominal wall its base is situated one third of the way up the line joining the right anterior superior iliac spine to the umbilicus (McBurney's point). Inside the abdomen, the base of the appendix is easily found by identifying the teniae coli of the

cecum and tracing them to the base of the appendix, where they converge to form a continuous longitudinal muscle coat**.** (Richrd S. Snell, 2007) [1]. While there are isolated reports of perityphlitis (fatal inflammation of the caecal region) from the late 1500s, recognition of acute appendicitis as a clinical entity is attributed to Reginald Fitz, who presented a paper to the first meeting of the Association of American Physicians in 1886 entitled 'Perforating inflammation of the vermiform appendix'. Soon afterwards, Charles McBurney described the clinical manifestations of acute appendicitis including the point of maximum tenderness in the right iliac fossa that now bears his name. The incidence of appendicitis seems to have risen greatly in the first half of this century, particularly in Europe, America and Australasia, with up to 16% of the population undergoing appendicectomy. In the past 30 years, the incidence has fallen dramatically in these countries, such that the individual lifetime risk of appendicectomy is 8.6% and 6.7% among males and females respectively. Acute appendicitis is relatively rare in infants, and becomes increasingly common in childhood and early adult life, reaching a peak incidence in the teens and early 20s. After middle age, the risk of developing appendicitis is quite small. There is no unifying hypothesis regarding the aetiology of acute appendicitis. Decreased dietary fibre and increased consumption of refined carbohydrates may be important. As with colonic diverticulitis, the incidence of appendicitis is lowest in societies with a high dietary fibre intake. In developing countries that are adopting a more refined western-type diet, the incidence continues to rise. This is in contrast to the dramatic decrease in the incidence of appendicitis in western countries observed in the past 30 years. No reason has been established for these paradoxical changes; however, improved hygiene and a change in the pattern of childhood gastrointestinal infection related to the increased use of antibiotics may be responsible. While appendicitis is clearly associated with bacterial proliferation within the appendix, no single organism is responsible. A mixed growth of aerobic and anaerobic organisms is usual. The initiating event causing bacterial proliferation is controversial. Obstruction of the appendix lumen has been widely held to be important, and some form of luminal obstruction, either by a faecolith or a stricture, is found in the majority of cases.

A faecolith is composed of inspissated faecal material, calcium phosphates, bacteria and epithelial debris. Rarely, a foreign body is incorporated into the mass. The incidental finding of a faecolith is a relative indication for prophylactic appendicectomy. A fibrotic stricture of the appendix usually indicatesprevious appendicitis that resolved without surgical intervention. Obstruction of the appendiceal orifice by tumour, particularly carcinoma of the caecum, is an occasional cause of acute appendicitis in middle-aged and elderly patients. Intestinal parasites, particularly Oxyuris vermicularis (pinworm), can proliferate in the appendix and occlude the lumen**.** (Norman S. Williams, 2018) [6].

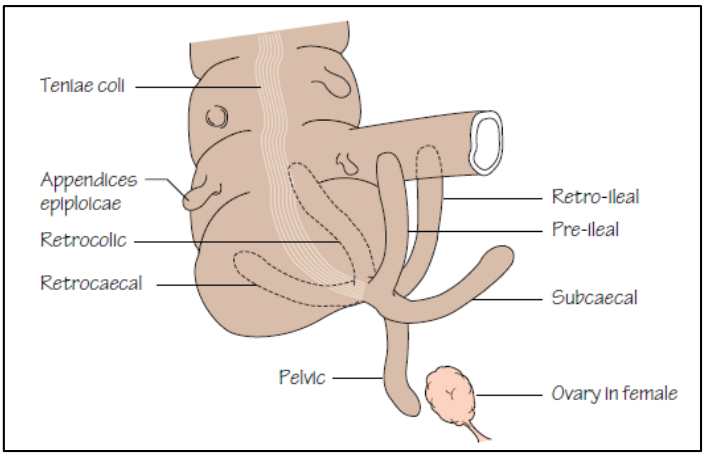

Fig 1: The various positions in which the appendix may be found, In the pelvic position the appendix may be close to the ovary in the female [Omar Faiz, 2002] [2]

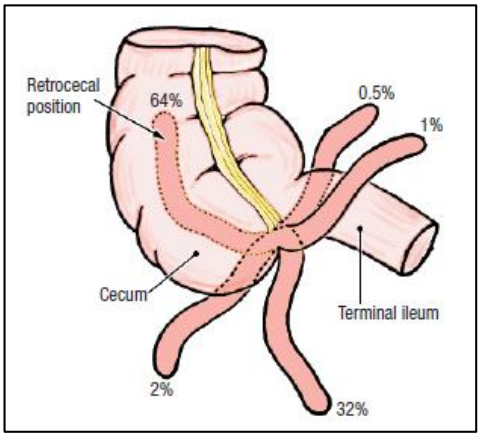

Fig 2: The various positions in which the appendix may be found [Patrick W, 2005] [4].

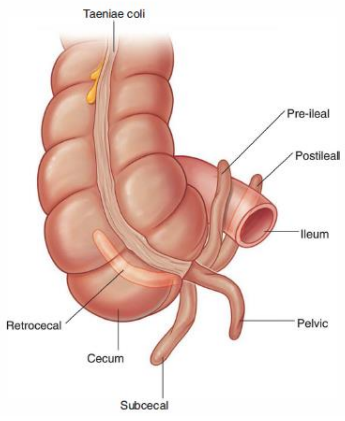

Fig 3: The various positions in which the appendix may be found [Richard L. Drake, 2015] [5].

Patients and Methods: This is an interventional study on 52 patients with acute appendicitis who refusing surgery from the period of 2014 to 2018. All patients completed a questionnaire including age, sex, occupation, residence, present symptoms and duration, previous medical and drugs history, previous surgical history, social history and family history. Clinical and physical examination were done to all patients. Completed all investigation including laboratory and radiological investigation, ultrasound, And the alvarado score were more than 7. (TABLE 1), all patients are admitted to the hospital, surgical ward, and treated with antibiotic and intravenous fluid, with observational charts to all.

Table 1: Alvarado Score. [Norman S. Williams, 2018] [6].

Symptoms	Score
Migratory RIF pain	1
Anorexia	1
Nausea and vomiting	1
Signs	
Tenderness (RIF)	2
Rebound tenderness	1
Elevated temperature	1
Laboratory	
Leucocytosis	2
Shift to left	1
Total	10

Results

Fifty two patients were studied, 40 male (76.92%) and 12 female (23.08%).The male to female ratio was 3.33:1. The age ranged from 15 to 35 years, with a mean age 25 years $\pm$ 5 years. Thirty six male patients (69.23%) and 10 female patients (19.23%) are responds to conservative treatment. Four male patients (7.69%) and 2 female patients (3.85%) not responds to conservative treatment after 48 hours and appendicectomy were done to them.

Discussion

Our study showed that the male to female ratio was 3.33:1. The age ranged from 15 to 35 years, with a mean age 25 years $\pm$ 5 years. Other study showed that the incidence of appendicitis is equal among males and females before puberty. In teenagers and young adults, the male–female ratio increases to 3:2 at age 25, thereafter the greater incidence in males declines. [Norman S. Williams, 2018] [6]. Appendicectomy is a classic surgical procedure, which was introduced around 1880. Non-operative management had been used earlier for many patients, but morbidity and mortality were high for both conservatively treated and appendectomized patients. In 1959 Coldrey**.** [Coldrey E, 1959] [7]. studied 471 patients who received antibiotics as single treatment, although this did not receive much attention. Standard treatment for acute appendicitis remained early appendicectomy to avoid perforation, but population-based evaluations have indicated significant long-term risks following surgical exploration for appendicitis**.** [Tingstedt B, 2004] [8], small bowel obstruction requiring operation has been shown to occur in 1·3 per cent by 30 years, and 30-day mortality to be 0·24 per cent with increased standard mortality ratio. [Andersson RE 2001, Blomqvist PG 2001] [9, 10]. A negative appendicectomy is particularly hampered with problems. [Andersson RE, 2007] [11, 17]. Therefore in recent years there has been increased interest in antibiotic therapy as primary treatment**.** [Liu K, 2007] [12], and several studies have indicated that perforated appendicitis in children can be treated with antibiotics [Levin T 2007, Aprahamian CJ2007, Abeş M, 2007] [13, 14, 15]. In addition, retrospective studies in adults with perforated appendicitis treated conservatively suggested that late recurrences exhibited a mild clinical course. [Dixon MR 2003, Andersson RE, 2007] [16, 11, 17]. One randomized trial that compared appendicectomy with antibiotic therapy in men (aged 18–50 years) found that 88 per cent improved without surgery, and 14 per cent had recurrent appendicitis within 1 year12. It is uncertain to what extent such promising results are representative of unselected patients. The most recent meta-analysis was published by Varadhan *et al* as an update to their previous review. [Varadhan KK 2010, Varadhan KK 2012] [18, 19]. We believe this to be the most sound meta-analysis due to the exclusion of the Malik and Bari and Turhan *et al* studies and the sensitivity analysis performed to determine the effect of the controversial Hansson *et al*'s study on the overall results. [Turhan AN 2009, Hansson J 2009, Malik A 2009] [20, 21, 22]. Data from the Hansson *et al*'s study were included on an intention to treat basis. They found that non operative treatment with antibiotics was associated with a significantly lower incidence of complications but there was neither difference in duration of hospital stay nor incidence of complicated appendicitis between the treatment groups. Also, there was no significant effect on the overall results due to the Hansson *et al*'s study. This is the first meta-analysis to conclude that antibiotics are both effective and safe as primary treatment for patients with uncomplicated acute appendicitis and that initial antibiotic treatment merits consideration as a primary treatment option. The appendix is part of the immune system and contributes to the patient's recovery after severe gut infections. removal of the appendix can be associated with mortality and morbidity. The dogma that appendicitis always progresses from mild inflammation to gangrene, perforation, and peritonitis may not be correct. There is evidence to support the idea that there is a milder form of appendicitis that may resolve spontaneously. The aim for future research is to learn how to distinguish between these different forms of appendicitis. The severe forms would likely benefit from an urgent operation; the milder forms could likely be treated conservatively with antibiotics. There are data suggesting that 73% of adults presenting with the suspicion of acute appendicitis (without perforation) may not need operation. There are no data to calculate a similar figure in children. However, there are some cohort studies suggesting that children with uncomplicated perforated appendicitis can be managed successfully without an operation. In these studies, however, there is a significant selection bias and only one randomized trial. At present there is no evidence to advocate the use of non operative treatment for acute appendicitis in children. Therefore, a randomized controlled trial is needed in this patient population. Such a prospective, pilot randomized controlled trial comparing conservative treatment of acute appendicitis versus appendectomy in children is in progress at the Astrid Lindgren Children's Hospital in Stockholm with the aim of establishing feasibility and safety as well as defining the power for a large multicentre, randomized controlled trial**.** (Svensson JF, 2012) [23].

Conclusion

Acute non perforated appendicitis can be treated successfully with antibiotics. However, there is a risk of recurrence in

cases of acute appendicitis, and this risk should be compared with the risk of complications after appendectomy.

References

1. Richrd S Snell. The Abdomenl Cavity, Chapter 5, clinical anatomy by regions, 8th edition, Lippincott Williams & wikins, 2007, 230.
2. Omar Faiz, David Moffat. The lower gastrointestinal tract, chapter 17, Anatomy at a Glance, 1st edition, Blackwell Science Ltd, Italy; 2002, 43.
3. Moore Keith L, Dalley Arthur F, Abdomen, chapter 2, Clinically Oriented Anatomy, 5th edition, Lippincott Williams & Wilkins, 2006, 274.
4. Patrick W. Tank, Abdomen, chapter 4, Grants, 13th edition, Lippincott Williams & Wilkins, 2005, 86.
5. Richard L Drake, Wayne Vogl A, Adam WM. Mitchell, Abdomen, chapter 4, Grays anatomy, 3rd edition, Elsevier, 2015, 321.
6. Norman S, Williams P, Ronan OConnell, Andrew W, Mc caskie. The vermiform appendix, chapter 72, Bailey and Loves, short practice of surgery, 27th edition, CRC Press, Taylor and Francis Group, London; 2018; (1301, 1302):1307.
7. Coldrey E. Five years of conservative treatment of acute appendicitis. J Int Coll Surg. 1959; 32:255-261.
8. Tingstedt B, Johansson J, Nehez L, Andersson R. Late abdominal complaints after appendectomy-readmissions during long-term follow-up. Dig Surg. 2004; 21:23-27.
9. Andersson RE. Small bowel obstruction after appendicectomy. Br J Surg. 2001; 88:1387-1391.
10. Blomqvist PG, Andersson RE, Granath F, Lambe MP, Ekbom AR. Mortality after appendectomy in Sweden, 1987–1996. Ann Surg 2001; 233:455-460.
11. Andersson RE. The natural history and traditional management of appendicitis revisited: spontaneous resolution and predominance of prehospital perforations imply that a correct diagnosis is more important than an early diagnosis. World J Surg. 2007; 31:86-92.
12. Liu K, Ahanchi S, Pisaneschi M, Lin I, Walter R. Can acute appendicitis be treated by antibiotics alone? Am Surg. 2007; 73:1161-1165.
13. Levin T, Whyte C, Borzykowski R, Han B, Blitman N, Harris B. Nonoperative management of perforated appendicitis in children: can CT predict outcome? Pediatr Radiol. 2007; 37:251-255.
14. Aprahamian CJ, Barnhart DC, Bledsoe SE, Vaid Y, Harmon CM. Failure in the nonoperative management of pediatric ruptured appendicitis: predictors and consequences. J Pediatr Surg. 2007; 42:934-938.
15. Abeş M, Petik B, Kazil S. Nonoperative treatment of acute appendicitis in children. J Pediatr Surg. 2007; 42:1439-1442.
16. Dixon MR, Haukoos JS, Park IU, Oliak D, Kumar RR, Arnell TD *et al*. An assessment of the severity of recurrent appendicitis. Am J Surg. 2003; 186:718-722.
17. Andersson RE, Petzold MG. Nonsurgical treatment of appendiceal abscess or phlegmon: a systematic review and meta-analysis. Ann Surg. 2007; 246:741-748.
18. Varadhan KK, Humes DJ, Neal KR, Lobo DN. Antibiotic therapy versus appendectomy for acute appendicitis: a meta-analysis. World J Surg. 2010; 34(2):199-209.
19. Varadhan KK, Neal KR, Lobo DN. Safety and efficacy of antibiotics compared with appendicectomy for treatment of uncomplicated acute appendicitis: meta-analysis of randomised controlled trials. BMJ 2012; 344:e2156.
20. Turhan AN, Kapan S, Kütükçü E, Yiğitbaş H, Hatipoğlu S, Aygün E. Comparison of operative and non operative management of acute appendicitis. Ulus Travma Acil Cerrahi Derg 2009; 15(5):459-462.
21. Hansson J, Körner U, Khorram-Manesh A, Solberg A, Lundholm K. Randomized clinical trial of antibiotic therapy versus appendicectomy as primary treatment of acute appendicitis in unselected patients. Br J Surg. 2009; 96(5):473-481
22. Malik AA, Bari SU. Conservative management of acute appendicitis. J Gastrointest Surg. 2009; 13(5):966-970.
23. Svensson JF. Conservative treatment of acute appendicitis in children (CONSAPP Pilot). NCT01572558. Available at: http://clinicaltrials.gov/ct2/show/NCT01572558. Updated April 4, 2012.