Ministry of higher education
And scientific research
University of Diyala
College of medicine

Incidence of appendectomy in Baquba teaching hospital , a clinical and histological study

Submitted to the Council of the College of Medicine, Diyala University, In Partial Fulfillment of Requirements for the Bachelor Degree in medicine and general surgery.

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2024-2025

الاهداء

الحمد لله الذي وفقني لهذا ولم اكن اصل اليه لولا فضل الله علي أما بعد

الى من كلله الله بالهيبة

الى من علمني العطاء بدون انتظار

الى من احمل اسمه بكل افتخار....(أبي العزيز)

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الى من تتسابق الكلمات لتخرج معبرة عن مكنون ذاتها

الى من كان دعائها سر نجاحي ..... (أمي الغالية)

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شكر وتقدير

أقدم خالص تقديري وعميق شكري الى أستاذي الفاضل

أ.د خالد أبراهيم عبد

الذي اشرف على هذا المشروع بعلميته الفذة

وحرصه وتعاونه الكريم

الذي دفعه لاخراج هذا العمل على الوجه الاكمل

كما اشكر كل من أعانني على انجاز هذا المشروع بأي جهد كان

ولو بكلمة تشجيع

وفقكم الله جميعا ..... انه سميع مجيب

Abstract

Background: Appendectomy is the most prevalence emergency surgery in Iraq and has a lot of complications.

Aims of the study: Detect the incidence of the appendectomy in Baquba teaching hospital, Find the link between demographic data and appendectomy , Record the histopathological changes.

Patients and methods: Cross sectional study done at Baquba teaching hospital from 1st September 2024 to 30th December 2024. Include patients who admitted to surgical section at Baqubah teaching hospital during these months, This study include all patients with appendectomy.

Results: 237 patients were admitted to appendectomy with percentage 6.9% from other types of cases, , 31(13.1%) of patients were have vomiting, 27(11.4%) of patients were have wound infection, 9(3.8%) of patients were have intra-abdominal abscess, 12(5.1%) of patients were have wound dehiscence and 5(2.1%) of patients were have small bowel obstruction.

Conclusion: We conclude that the incidence of appendectomy 6.9% at Baqubah teaching hospital. vomiting and wound infection are the most common complications after appendectomy, we also noticed some other complication such as wound dehiscence, Intra-abdominal abscess , Small bowel obstruction . 7.1% of the sample were have unusual histopathological changes, E.vermicularis is the commonest findings followed by Fibrous obliteration, Tuberculosis, Carcinoid, Eosinophilic infiltration, Granulomatous inflammation.

Keywords: Appendectomy, Appendicitis, Diyala.

Introduction

The vermiform appendix is a about a tubular diverticulum which comes from the posteromedial wall of the cecum which is about30 mm below the ileocecal valve location.(1)

The placement of the appendix tip varies and might be retroileal, retrocecal, subcecal, preileal, or pelvic. This variation in the appendix's position may have an impact on how appendicitis presents clinically.(2)

Around the world, appendicitis, or inflammation of the vermiform appendix, is the most frequent cause of acute abdomen in adults and children.(3)

The most effective and recommended treatment for acute appendicitis is an appendectomy, which involves removing the inflamed appendix to assist patients prevent potential complications from the illness.(4)

If left untreated, appendicitis can result in a number of clinical problems that could ultimately lead to the patient's death. One of the most common surgical procedures done globally is the appendectomy.(5)

An appendectomy is a frequent, straightforward, and rather uncomplicated treatment. Nevertheless, there are a few hazards connected to the

procedure, such as bleeding, infection, harm to the surrounding organs, and intestinal blockage. (6)

It's critical to understand that the dangers of an appendectomy surgery are far lower than those of untreated, potentially fetal appendicitis. As soon as feasible, an appendectomy must be performed in order to avoid the development of abscesses and peritonitis.(7)

The digestive system's ability to function is unaffected directly by the removal of the appendix (appendectomy). Most patients can return to their regular diet and digestive processes quite soon following an appendectomy.(8)

It is crucial to remember that each surgical operation has the potential to momentarily impair the digestive system's regular functions. Following an appendectomy, some patients may have transient digestive issues such bloating, constipation, or diarrhea. Typically, these symptoms will away in a few days or weeks as the body heals after the procedure. (9)

More severe digestive issues can occasionally result from appendectomy complications including infection or intestinal damage, although these are uncommon.(10)

Bowel adhesions are common in people who have had appendices removed. According to a research, adhesions occurred in 68.1% of individuals who had appendicemas, most frequently in the center of the right abdomen. Adhesions are said to develop following 93–100% of upper abdominal laparotomies and 67-93% of lower abdominal laparotomies, according to a number of additional investigations.(11)

Furthermore, adhesions are a common cause of small bowel obstruction, accounting for the majority of cases in individuals whose etiology are known. Appendectomy is one of the operations that most frequently results in adhesion blockage. Various clinical outcomes show that intestinal obstruction accounted for 3.3% of major laparotomies and 28.8% of cases of big or minor intestine obstructions. (12, 13)

Aims of the study

The aim of the study was to:

- Detect the incidence of the appendectomy in Baquba teaching hospital

- Find the link between demographic data and appendectomy

- Record the histopathological changes.

Material and methods

Study design

Cross sectional study

Study area

Baquba teaching hospital

Study time

From 1st September 2024 to 30th December 2024.

Study population

Include patients who admitted to surgical section at Baqubah teaching hospital during these months, This study include all patients with appendectomy.

Ethical consideration

The study was approved by Council of the College of Medicine, Diyala University. Informed consent was obtained from Baqubah teaching hospital.

Data collection method

A questionnaire and the patient's medical record were used to gather data. A questionnaire was created by a thorough analysis of pertinent literature. The data collected was gender, age group, family history, and used central

lab of this hospital to gather data about the histopathologic changes after the appendectomy.

Statistical analyses

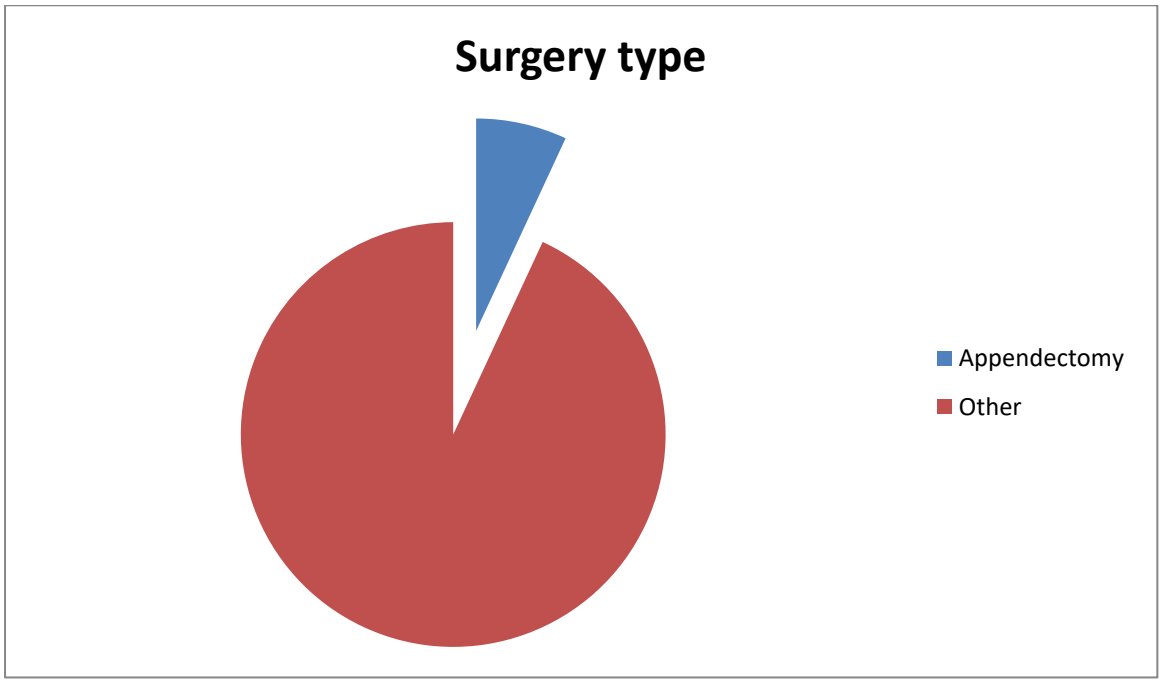
The statistical program SPSS-27 (Statistical Packages for Social Sciences, version 27) was used to analyze the data. A descriptive statistical method was used to examine the data (frequency, percentage).

Results

From 3423 of cases at Baqubah teaching hospital, we found that 237 patients were admitted to appendectomy with percentage 6.9% from other types of cases as shown in table 1.

Table (1) : Distribution of patients according to surgical types.

Surgical type	Number	Percentage
Appendectomy	237	6.9%
Other	3186	93.1%
Total	3423	100%



Figure(1): Distribution of patients according to surgical types.

Appendectomy was more common in male (n=152, 64.1%) than female (n=85, 35.9%) with male to female ratio of 1,8: 1. The highest rate in age group was 10-19 years age group (n=112,47.8%) followed by 1-9 years age group (n=66,27.8%) and 20 29 years age group (n=51,21.5%) and (n=8,3.4%) of patients were more than 30 years as shown in table 2.

Table (2): Demographic characteristics of patients.

Demographic data	Number	Percentage
Gender		
Male	152	64.1%
Female	85	35.9%
Age group		
1-9 years	66	27.8%
10-19 years	112	47.3%
20-29 years	51	21.5%
≥ 30 years	8	3.4%
Family history	121	51.1%

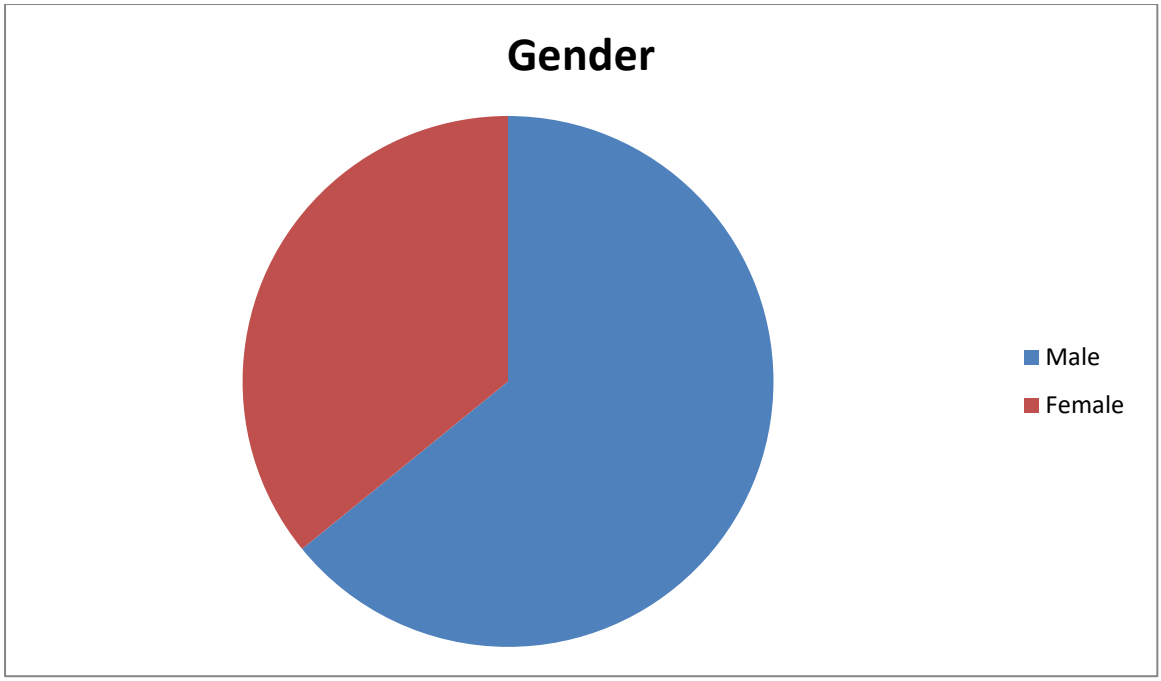
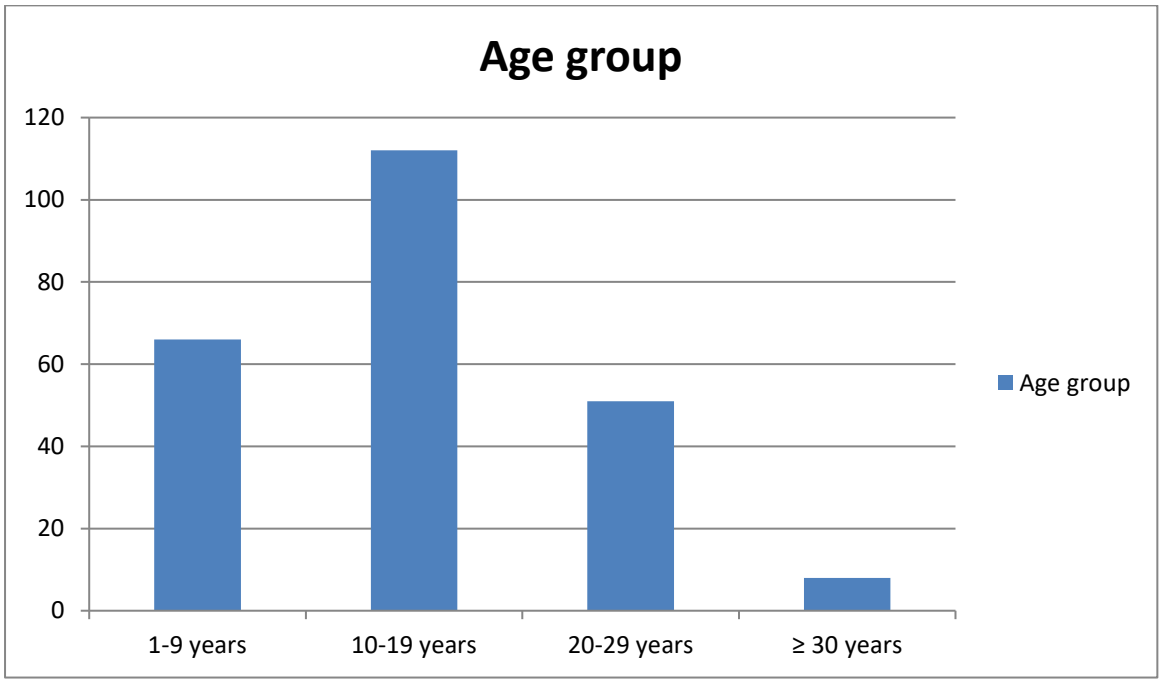


Figure (2): Gender distribution of the sample.

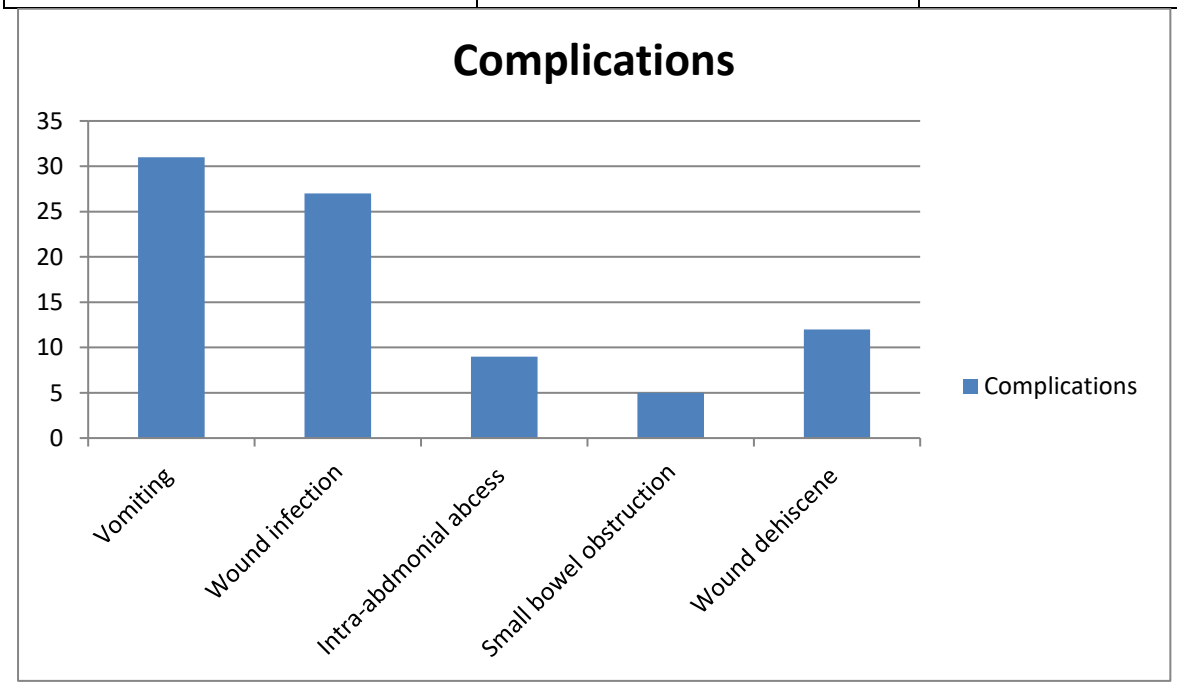


Figure(3): Age group of sample.

Table 3 show the complications after appendectomy, 31(13.1%) of patients were have vomiting, 27(11.4%) of patients were have wound infection, 9(3.8%) of patients were have intra-abdominal abscess, 12(5.1%) of patients were have wound dehiscence and 5(2.1%) of patients were have small bowel obstruction.

Table (3): Complications after appendectomy.

Complications	Number	Percentage
Vomiting	31	13.1%
Wound infection	27	11.4%
Intra-abdominal abscess	9	3.8%
Wound dehiscence	12	5.1%
Small bowel obstruction	5	2.1%



Figure(4)|: Complications after appendectomy.

Table 4 show the histopathologic changes after appendectomy which 9(3.8%) were with E.vermicularis, 3(1.3%) of sample were fibrous obliteration, 1(0.4%) of included sample were carcinoid, Eosinophilic infiltration, Granulomatous inflammation, 2(0.8%) of sample were tuberculosis.

Table (4): Histopathologic changes of the sample.

Histopathologic changes	Number	Percentage
E.vermicularis	9	3.8%
Fibrous obliteration	3	1.3%
Carcinoid	1	0.4%
Eosinophilic infiltration	1	0.4%
Tuberculosis	2	0.8%
Granulomatous inflammation	1	0.4%
Total	17	7.1%

Discussion

The appendix tissue possesses the features of a lymphoid organ and there is a larger amount of lymphoid tissue in young subjects. Lymphoid hyperplasia can be caused by any obstruction occurring in the lumen of the appendix and this can develop into appendicitis if the condition continues. Appendectomy occur more frequently in young people.

As seen in our study, between 10 and 19 years was (47.3%). These results are supported with studies from different countries of the world. Some study observed similar results in Lahore, Pakistan with 65% patients falling in age group of 10 years to 25 years.(14)

While others showed highest appendectomy incidence in aged 15-29 years in their study from Tehran.(15) Supporting results were also reported from Canada,Nigeria, United States, and Turkey.(16,17,18,19)

In this study male to female ratio was 1.7 (64.1% males and 35.9% females) which is agree with the findings in other studies. Korner et al.(20) found that 56% of patients were male and 44% were female.

In our study we found that vomiting and wound infection are the most common complications after appendectomy, we also noticed some other complication such as wound dehiscence, Intra-abdominal abscess , Small bowel obstruction.

Hiwa et al.(21) done a study at Erbil found that from 4701, 601(12.78%) of the sample were wound infection, 216(3.68%) of the sample were intestinal obstruction and 58(1.23%) of the sample were intra-abdominal abscess. This difference may be due to the difference of our study sample number to this study.

Awni et al.(22) do a study at Kirkuk include 260 patients with appendectomy as a sample, found that 54(20.8%) have surgical site infection, 15(5.8%) of the sample were Paralytic ileus and 5(1.9%) of the sample were abdominal abscess.

We found that 7.1% of the sample were have unusual histopathological changes, E.vermicularis is the commonest findings followed by Fibrous obliteration, Tuberculosis, Carcinoid, Eosinophilic infiltration, Granulomatous inflammation.

Akbulut et al .(23) found that thirty-seven of the 54 patients revealed Enterobius vermicularis, five a carcinoid tumor, six a mucinous

cystadenoma (two were mucoceles), two TB, and two eosinophilic infiltration, and two each were diagnosed with GCCs and neurogenic hyperplasia. While 52 patients underwent a standard appendectomy, two patients, who were preoperatively diagnosed with tuberculous appendicitis, had a right hemicolectomy. All patients with malignant tumors were diagnosed clinically with acute appendicitis, and none of them had symptoms of carcinoid syndrome or were preoperatively diagnosed with an appendicular tumor.

Conclusion

We conclude that the incidence of appendectomy 6.9% at Baqubah teaching hospital. vomiting and wound infection are the most common complications after appendectomy, we also noticed some other complication such as wound dehiscence, Intra-abdominal abscess , Small bowel obstruction . 7.1% of the sample were have unusual histopathological changes, E.vermicularis is the commonest findings followed by Fibrous obliteration, Tuberculosis, Carcinoid, Eosinophilic infiltration, Granulomatous inflammation.

Recommendations

1- Further study with more study sample to get more accurate results.

2- Encourage the sterilization before and after surgery to reduce the infection of surgical site.

3- Increase awareness about the appendectomy through lectures, interviews and social media .

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