

# **CONCOMITANT INFLAMMATION OF THE GALL BLADDER AND APPENDIX**

Thesis  
submitted in Partial Fulfillment for M.D. Degree  
in General Surgery

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**1992**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



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## ACKNOWLEDGEMENTS

I am much indebted and more than grateful to Professor Ahmed Fawzy Bahnasy, Professor and Head of General Surgery, Faculty of Medicine, Ain Shams University for his great help, support and guidance. His advice and encouragement gave me the push and the genuine assistance to fulfill this work.

I wish to express my deep gratitude to Professor Adly Farid Professor and Head of Pathology, Faculty of Medicine, Ain Shams University for his help and guidance to complete this work.

It is a great pleasure to express my sincere thanks and gratitude to Dr. El Sayed El Moharrakawy, Assistant Professor of General Surgery, Faculty of Medicine, Ain Shams University for his kind supervision and clarifying suggestions. His great experience was of great importance in providing many invaluable aspects for this work.

I am grateful to Dr. Mamdouh Ahmed Ghoneim, Assistant Professor of Radiodiagnosis, Faculty of Medicine, Ain Shams University for his sincere help and encouragement.

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# **INTRODUCTION**

## **AIM OF THE WORK**

## **INTRODUCTION AND AIM OF WORK**

A suspected relationship between appendicular diseases and gall-bladder disorders dates as back as 1936 when Draper reported a 40% incidence of appendicitis associated with cholecystitis. He explained the association of these diseases as being due to exchange of organisms via the lymphatics and portal vein. Carter and Hotz (1939) reported three cases of biliary dyskinesia which were relieved by appendectomy. They attributed this phenomenon to reflex spasm in the biliary tract secondary to diseased appendix.

A controlled study done by Lowery and Lenhardt (1962) of 268 cases of biliary surgery. In 166 cases of these patients appendectomy was performed. Pathological reports of appendices removed in this series revealed that in 33 cases (28.4%) either active or chronic disease existed.

Wilkie (1927) proved that in many cases of duodenal ulcer, about 35% complained of symptoms suggestive of cholecystitis. In these patients, the combined cholecystography and barium meal tests gave a most valuable diagnostic aids. At operation, it was found that there were calcular cholecystitis associated with the duodenal ulcer and the appendix was diseased, and was removed in about one third of cases as an incidental operation.

However, incidental appendectomy in the course of other operation continued to be a highly controversial. The opinions about the operation varies widely, ranging from the view that the appendix should be removed every time the peritoneal cavity is opened, to the belief that incidental appendectomy is dangerous and should never be performed (Hays, 1977).

In 1977, Condon reported that incidental appendectomy serves to obviate the future development of appendicitis and its attendant morbidity and mortality risks.

Also, Allen (1957) reported that the incidental removal of the appendix should not only be considered as an elective procedure but also, as a prophylactic one, provided that appendectomy can be performed through the incision already in use, if patient's general health and operative condition are good, and if, in the surgeon's judgement the procedure can be performed without threat, including wound soilage.

Literature has revealed a number of references to concomitant cholecystic-appendiceal disease. These reports refer to the high incidence of unsuspected pathological processes within the appendix as an indication for its removal, if possible, at the time of cholecystectomy.

The aim of this work is to study the pathology of appendices removed during cholecystectomies, for acute and chronic cholecystitis and correlating this with the clinical, sonographic, radiological and

operative findings, in order to explore the extent of diseased appendices in 100 Egyptian patients suffering from acute and chronic cholecystitis.

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# **REVIEW OF LITERATURE**

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## **REVIEW OF LITERATURE**

### **ANATOMY OF THE VERMIFORM APPENDIX**

The vermiform appendix is present only in man and certain anthropoid apes. Morphologically, it is the undeveloped distal end of the large caecum found in many lower animals (Rains and Mann, 1988).

The appendix varies considerably in length and circumference. The average length is between 7.5 cm and 10 cm. Specimens of over 30 cm in length have been recorded. The appendix average 0.5 longer in the male than in the female. The lumen, which should admit a match stick, is irregular, being encroached upon by the multiple longitudinal folds of mucous membrane (Rains and Mann, 1988).

The appendix is attached by its base to the route of convergence of three taeniae coli on the posteromedial wall of the caecum below the ileo-caecal opening. The three taeniae coli emerge into a complete longitudinal muscle layer over the appendix (Last, 1979). On the surface of the abdomen, this point lies one third of the way up the oblique line that joins the right anterior superior iliac spine to the umbilicus (spino-umbilical line) which is McBurney's point (Rains and Mann, 1988).

The mesoappendix is a peritoneal fold enclosing the appendicular vessels. Its base is a prolongation of the left (inferior) layer of the

mesentery of the terminal ileum and its free crescentic edge contains the appendicular artery. It is attached to the appendix from the base to the point of entry of the appendicular artery, a variable point which is usually near the tip but may be at any point along the appendix. Apart from its base which is 1-1.5 inches below the ileocaecal valve (Maingot, 1974).

The appendix has variable positions. Sir Wakeley (1933), following the study of 1000 cases, gave the location of the appendix as follows:

- (1) Retrocaecal: commonest position (74%) lies freely coiled up in the retrocaecal recess.
- (2) Pelvic position: 21% hangs down over the pelvic brim into the pelvis.
- (3) Paracaecal about 2%.
- (4) Pre-ileal 1% and post-ileal 1%.

When, owing to some embryological error, the caecum fails to descend to its normal position, the organ may be found in such situations as the epigastrium or beneath the right lobe of the liver (Maingot, 1974).

Inconstancy of position:

The appendix must necessarily share in abnormalities in position of the caecum. The most frequent of these is failure of the caecum to descent, which results in the base of the appendix being situated in the right hypochondrium. Very occasionally, the caecum and appendix are situated in the left iliac fossa or in the left hypochondrium (Rains and Mann, 1988).

Congenital abnormalities:

- \* Agenesis: Once in 100,000 persons, the vermiform appendix is absent.
- \* Duplication: A few cases of double appendix have been reported. In some instances, one of the twin appendices has been found actively inflamed and the other uninvolved. In some cases, the second appendix might even be a congenital caecal diverticulum (Davies, 1972).

Left sided appendix (situs inversus viscerum):

A congenital abnormality where there is complete transposition of thoracic and abdominal viscera, occurs once in 35,000 individuals, and is more common in males. In such cases, of course, the vermiform appendix is situated on the left side as it also in some cases of non-rotation of the mid-gut (Rains and Mann, 1988).

Para-appendiceal (paracaecal fossa):

Peritoneal folds near the base of the appendix are sometimes found. The most anterior lies in front of the terminal ileum between the base of the mesentery and the anterior wall of the caecum and raised up by the contained anterior caecal artery, beneath this fold is often found a fold of peritoneum (the bloodless fold of Trevas) which runs from the terminal ileum towards the base of the appendix and becomes attached to the meso-appendix. Behind the bloodless fold is the mesoappendix. Thus, three parallel folds of peritoneum enclose two ileocaecal fossae. Between the mesoappendix and the parallel floor of the right iliac fossa is often a third recess and finally the retrocaecal fossa when present constitutes a fourth one. The mouths of these four fossae face away from each other (Last, 1979).

Blood vessels of the appendix:

The appendicular artery is a branch of the lower division of the ileo-colic artery, passes behind the terminal ileum to enter the mesoappendix, a short distance from the base of the appendix. It then comes to lie in the free border of the mesoappendix, but for a variable distance from the tip, where the mesoappendix is lacking, the artery lies directly on the muscle wall beneath the peritoneal coat (Davies, 1972).

Accessory appendicular artery is a branch of the posterior caecal artery is found in 50% of cases (Rains and Ritchie, 1981).

The appendicular vein is radical of the ileocolic vein, which drains into the portal system via the superior mesenteric vein (Davies, 1972).

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**Lymph drainage of the appendix:**

It drains from its lymphatic follicles through the muscle wall into the nodes in the meso-appendix, these drain into para-colic nodes lying along the ileo-colic artery and so, to the superior mesenteric group of lymph nodes (Last, 1979).

**Microscopic anatomy of the appendix:**

The appendix is lined by columnar cell intestinal mucosa of colonic type. Crypts are present but are not numerous, in the base of the crypts lie the special cells which give rise to carcinoid turnover (Last, 1979).

The submucosa contains numerous lymphatic aggregations (follicles). This profusion of lymph tissue has promoted the description of "abdominal tonsils" and draws attention to this feature as relevant to the causes of appendicitis (Rains and Mann, 1988).

The deeper part of the mucosa is occupied by an almost continuous ring of lymphatic follicles, which are profuse in children less in adults and atrophies in old age. The lymphoid follicles in the