ACUTE ABDOMEN IN CHILDREN

E S S A Y

Submitted in Partial Fulfilment of
M.Sc. Degree

in

General Surgery

BY

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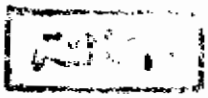

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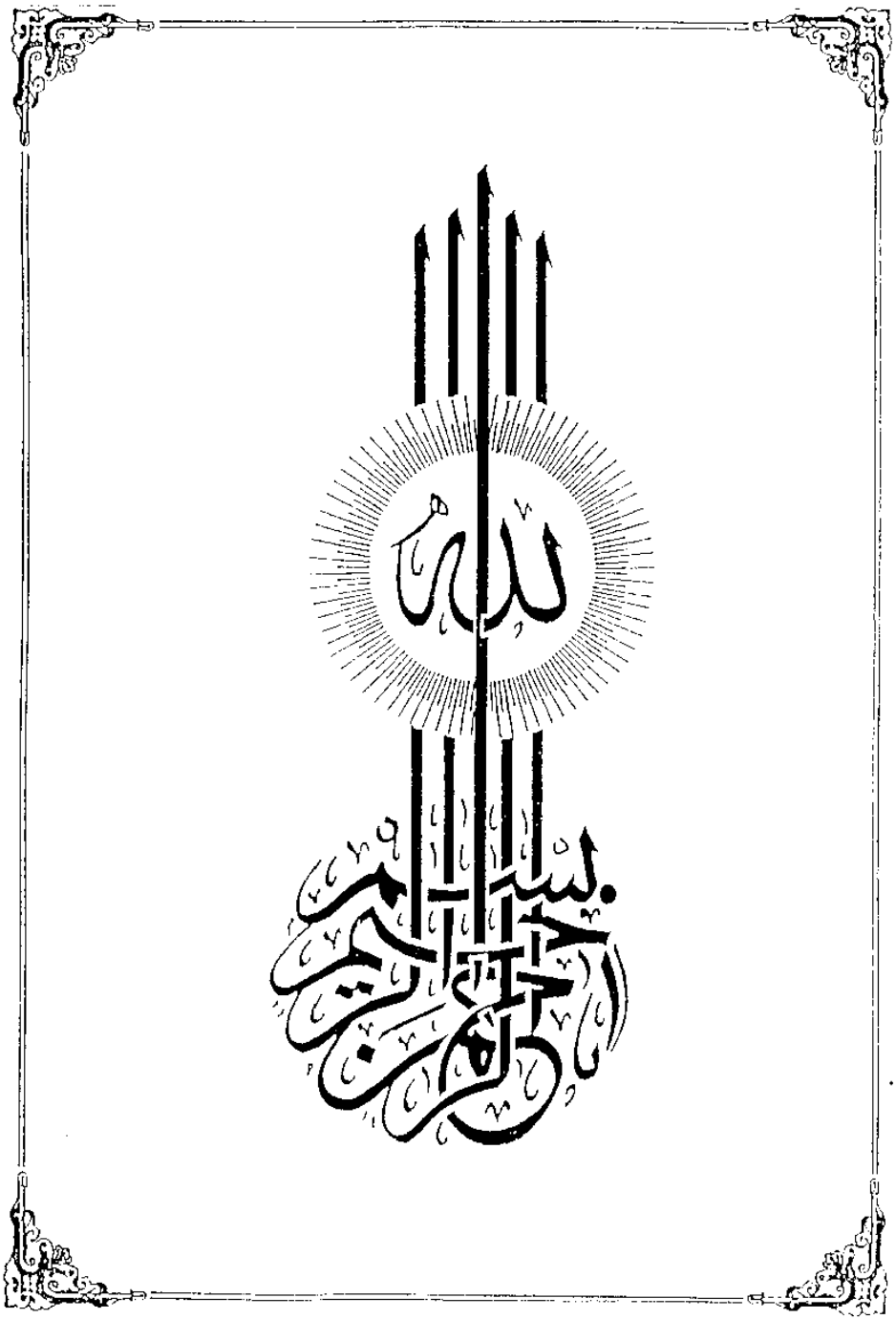
1985

ACKNOWLEDGEMENTS

"First and Foremost, thanks are due to God."

I wish to express my deep gratitude and sincere thanks to Dr. Adel Abd Elkader, Assistant professor of general surgery, Faculty of Medicine, Ain Shams University for his valuable advice, fatherly guidance, wise criticism and useful remarks. Without his constant supervision, this work would not have been as interesting as it were.

I wish also to express my appreciation to the staff of general surgery department - Ain Shams University, for their kind cooperation.



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INTRODUCTION

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The term "acute abdomen" is applied to any condition that gives rise to acute abdominal pain; surgical treatment may or may not be required. Acute abdominal pain in childhood is always a cause for concern, although the delay before parents call for medical advice may vary from a few hours to several days. Of the many possible causes of such pain about 70 per cent are non surgical.

The diagnosis of acute abdominal disease depends on obtaining a good history and making a satisfactory examination and both these requirements can be hard to achieve in children.

ETIOLOGY OF ACUTE ABDOMEN

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Acute abdominal pain in children may originate from intestinal, pancreatic, hepatobiliary, genitourinary or systemic disorders or from the presence of an intestinal foreign body.

Intestinal considerations:

Gastroentritis is probably the most common non functional cause of acute abdominal pain in children. Although a virus is usually responsible, infection with salmonella, shigella, and yersinia organisms should be considered. Acute appendicitis is the most common lesion requiring surgery in childhood. Appendicitis is most likely to be missed in the child under three years of age-though less common than in older children it is not a rarity. Intestinal obstruction in pre-school children may be due to intussusception or rarely as a result of strangulation in an inguinal hernia. Most cases of obstruction in older children are due to bands or adhesions following a previous abdominal operation, most commonly appendicectomy.

Blunt trauma is an etiologic factor which may be especially difficult to consider in the battered child because the parents offer no explanation for the abdominal findings. In Henoch-Schonlein purpura, abdominal pain and presence of occult blood in stools may precede appearance of the more characteristic features. The development of pain and appearance of blood-streaked stools following gastroentritis should alert the examiner to the hemolytic-uremic syndrome.

Inflammatory bowel disease occasionally presents with acute pain secondary to haemorrhage, perforation, obstruction, fistula formation, or toxic megacolon. Ascariasis and other helminthic infection may lead to severe cramping pain. Constipation with rectosigmoid impaction may produce significant cramping, especially after meals.

Mesenteric adenitis is believed to result from lymphoid hyperplasia in the distal ileal mesentery in association with respiratory illness. If the patient has melena with pain, Meckel's diverticulum should be considered. The incidence of primary peritonitis with pneumococcal or streptococcal infection has diminished. It is most common in women and children with nephrotic syndrome.

Pancreatic conditions:

Pancreatitis is often ignored as a possible cause of acute abdominal pain in children. The causative factors are: trauma, biliary disease, viral (mumps), and steroid therapy. Pseudocysts of the pancreas may result from inflammation or trauma.

Hepatobiliary conditions:

Acute abdominal pain in the right upper quadrant may herald viral hepatitis. Pain in the right upper quadrant in the absence of jaundice should suggest pneumonia of the right middle or lower lobe. Cholelithiasis is of clinical significance only with hemolytic anaemias, such as thalassemia, sickle cell disease, or spherocytosis.

Genitourinary conditions:

Pyelonephritis in early childhood is as likely to present with abdominal as with costovertebral pain. Renal stones may be encountered in children with colic who are predisposed to stone formation. Ovarian symptoms related to cysts, ovulation, endometriosis, or inflammation increase in frequency with the onset of menses and sexual activity. Testicular torsion must always be excluded in boys.

Systemic conditions:

Acute, but diffuse, abdominal pain may be the most apparent symptom in a number of systemic diseases. Neurologic disease may be present. Pain distributed along an abdominal dermatome may reflect early herpes zoster or intervertebral disc infection. Abdominal influenza may be associated with severe abdominal pain. The ischaemia resulting from vascular lesions produces abdominal pain. Lesions range from the thrombotic crisis of sickle cell disease to the less clearly defined vasculitis syndromes. Two metabolic disorders that present in children with prominent abdominal pain are diabetic ketoacidosis and porphyria.

Foreign bodies:

The presence of an intestinal foreign body rarely produces acute abdominal pain. Perforation by a sharp object may occur at any level, the oesophagus and duodenum being the most common sites. A distal perforation may be "silent" as the omentum seals off the tear and the ensuing inflammation. With obstruction or perforation of the oesophagus, pain may be referred to the epigastrium. (Lake, 1979).

METHODS OF DIAGNOSIS

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The History

Neither the infant nor the very young child can give a complete history, but it is useful to obtain whatever history from the child is possible. The preschool child can often verbally describe pain and other symptoms but such history may not be fully reliable. In general, However, once a child reaches school age, taking a history becomes considerably easier.

Pain.

In the first place one needs to know how long the child has had the pain. One next needs to know whether the pain is continuous or intermittent. One needs to know where the pain is. The severity of the pain has to be assessed. The nature of the pain may be helpful in diagnosis (Illingworth, 1979). Location is believed to be significant as pain away from the umbilicus is more likely to have an organic cause than pain close to the umbilicus. Pain without tenderness suggests a functional or referred origin (Lake, 1979). An attack of abdominal pain lasting

more than three hours should be regarded as an abdominal emergency until proven otherwise. Misleading answers are often given by children to the standard questions concerning the quality, periodicity, and radiation of the pain. It is of greater practical importance to establish whether pain is still present, becoming worse, or subsiding. (Fowler, 1976).

Vomiting.

Vomiting is an important symptom that frequently is associated with acute abdominal crises. A careful history will include the following aspects concerning vomiting: the relationship of vomiting to the onset of pain, the character of the vomitus, and the frequency and volume of vomiting (Beal, 1981).

Diarrhoea.

Diarrhoea lasting more than 24 hours should suggest the possibility of a pelvic, retrocaecal or retroileal appendicitis, and even in proven cases of gastroentritis, diarrhoea does not preclude the possibility that appendicitis or intussusception may supervene (Fowler, 1976). Significant diarrhoea, as defined by large volume rather

than by frequency, rarely points to a surgical lesion (Lake, 1979).

Menstrual history.

A girl's menstrual history is also important. The first few periods may be associated with discomfort and lower quadrant pain. Ovulatory pain (Mittelschmerz) is a sudden sharp twinge that leaves a dull ache. Its relationship to the intermenstrual cycle and its sudden onset should make this diagnosis (Raffensperger, 1980).

Past history.

It is important not to overlook the past history, a child known to have sickle cell disease may have an acute abdominal crisis as the cause of abdominal pain. A child with known cystic fibrosis or inflammatory bowel disease may also have frequent abdominal pains that do not require surgery (Bishop and Schnaufer, 1983).

Other symptoms.

Extraabdominal complaints are commonly present, such as cough, sore throat, headache; they are often indicative