

CLINICAL  
GASTRO-  
ENTEROLOGY

AVERY JONES  
&  
GUMMER

# Clinical Gastroenterology

F. AVERY JONES

M.D. (Lond.), Hon. M.D. (Melbourne), F.R.C.P. (Lond.)

*Physician, Central Middlesex Hospital, Consulting Gastroenterologist,  
St. Mark's Hospital for Diseases of the Rectum and Colon  
and to the Royal Navy*

AND

J. W. P. GUMMER

M.S. (Lond.), F.R.C.S. (Eng.)

*Surgeon, Central Middlesex Hospital*

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## PREFACE

This book is based on the practice of gastroenterology at the Central Middlesex Hospital, a regional hospital of 720 beds, serving the general population of a large area of North-West London.

There is a special Gastroenterological Unit at the hospital with its own research department built with the aid of a grant from the Nuffield Trustees and generously supported by the Medical Research Council.

The main emphasis of the book is on diagnosis and management, and we hope it will be of value to all in practice who are concerned with clinical problems in gastroenterology. Special emphasis has been given to the differential diagnosis arising from leading symptoms, and to the practical details of diagnostic techniques and treatment. It is not a completely comprehensive survey for this would need several volumes to achieve. No attempt has been made to cover proctological diseases, nor have such common conditions as appendicitis and gall-bladder disease been included for we feel that these are general surgical problems. It is hoped that the book will be regarded as a companion to Professor Sheila Sherlock's *Diseases of the Liver and Biliary System*.

The illustrations have been chosen in the hope that they contribute something useful to the text, to emphasize important points, and to assist with differential diagnosis. Many of the illustrations are X-rays and we are particularly indebted to Dr. F. Pygott and Dr. C. F. Hutton of the Department of Radiology at the Central Middlesex Hospital, who have provided most of the films.

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F. AVERY JONES.

J. W. P. GUMMER.

*Central Middlesex Hospital,  
London, N.W. 10.*

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## CHAPTER I

# SYMPTOMS RELATED TO DISORDERS OF THE ALIMENTARY TRACT

## PAIN

Pain from the alimentary tract may result from:

- (a) Strong contraction of smooth muscle.
- (b) Mechanical or chemical irritation of inflamed mucosa.
- (c) Irritation and inflammation of the peritoneal surface of the stomach and intestine.
- (d) Stretching of the capsule of a viscus, e.g. hepatic congestion in heart failure.
- (e) Irritation of intercostal or splanchnic nerves by direct extension of inflammation or neoplasm.

The alimentary tract is embryonically a mid-line structure but pain localization is very variable. Duodenal ulcers may occasionally give rise to left-sided pain, and gastric ulcers may cause pain on the right side, although characteristically the reverse is true.

Pain may be referred away from its site of origin. Lower oesophageal lesions may give rise to pain felt in the root of the neck spreading to the angles of the jaw and down one or both arms simulating angina. Pain arising in the back may be referred to the abdomen suggesting an alimentary or biliary pathology. Thus injection of the interspinous ligament between D6-7 may induce pain identical with biliary pain.

Pain may be modified in several ways. Individuals vary greatly in their sensitivity to pain and some may be extremely tolerant of painful stimuli, a fact better known to dentists than doctors. Such patients can be subjected to normally most painful procedures without evincing any complaint. Their pain mechanism is defective but whether this is depressed at the cortical, thalamic or peripheral level is uncertain. Sometimes it may be found that an individual with a large painless gastric ulcer is insensitive to cutaneous stimuli. Conversely, some patients overact very much to discomfort and



pain. This may not be due to any abnormality of pain mechanism but to a lack of the normal stoicism shown by most individuals in the presence of pain. Pain described with such superlatives as 'terrible' is invariably associated with neurotic over-anxious individuals. Pain from inflammation is reduced by corticosteroids which inhibit the inflammatory reaction. Pain may be modified by previous operation on the nervous system. Unilateral splanchnicectomy may result in localization of pain on the contralateral side and bilateral sympathectomy may reduce or abolish peritoneal pain. Apart from the opiates, drugs such as chlorpromazine can reduce pain sensitivity and E.C.T. may have the same effect. Pain associated with the presence of gross skin pigmentation from heat is always organic in origin.

In eliciting the history of pain it is convenient to remember Ryle's Ten Questions:

- (1) Character.
- (2) Severity.
- (3) Situation (including depth from surface).
- (4) Localization (or extent of diffusion).
- (5) Paths of reference.
- (6) Duration.
- (7) Frequency.
- (8) Special times of occurrence.
- (9) Aggravating factors.
- (10) Relieving factors.

In studying a problem case it is helpful to make a special record of all details on a special record sheet.

#### DESCRIPTION OF PAIN

*Site and radiation* (mention gesture used to indicate pain and mark any points of tenderness on examination)

#### *Character*

- (a) Nature.
- (b) Severity
- (c) Posture adopted.
- (d) Causing restlessness or immobility.

*Time relations*

Length of history.  
 Periodicity.  
 Change in frequency or severity since onset.  
 Usual time of day.  
 Length of attack.  
 Abrupt or gradual onset.  
 Continuous or intermittent.  
 Sudden or gradual relief.

*Aggravating factors*

*Relation to food*  
*Effect of alkali*

*Relieving factors*

*Relation to posture*  
*Relation to exercise*

*Symptoms associated with pain*

Flatulence	Nausea	Sweating	Bowels
Distension	Vomiting	Pallor	Micturition
Borborygmi	Salivation	Faintness	Other
	Regurgitation	Headache	

*Symptoms before first attack of pain**Symptoms between attacks of pain*

When reviewing possible causes of abdominal pain it is useful to use an anatomical framework. *Visceral* causes may arise from the alimentary tract or peritoneal covering, from the biliary or hepatic system, from the pancreas, the kidneys or the pelvis. The *Nervous System* may be responsible for central mechanism of pain and for pain due to irritation of peripheral nerves. The *Musculo skeletal* system may give rise to pain of abdominal distribution. The *Vascular-System* may be partially involved in a disease process and finally, general medical diseases may cause reflex symptoms within the abdomen.

## COMMON CAUSES OF AN ACUTE CRISIS OF ABDOMINAL PAIN

These common causes account for 95 per cent of patients with an acute abdominal crisis:

Food poisoning.  
 Leaking or perforated peptic ulcer.  
 Acute appendicitis.  
 Acute cholecystitis or biliary pain from gall-stones.  
 Renal and ureteric colic.  
 Intestinal obstruction.

Acute diverticulitis.  
Acute pancreatitis.  
Acute salpingitis.  
Twisted ovarian cyst.

#### LESS COMMON CAUSES OF AN ACUTE CRISIS OF ABDOMINAL PAIN

##### GASTRO-INTESTINAL AND PERITONEAL

Bolus colic from orange pith, dried fruit, or unripe fruit.  
Infestation with tapeworm or round worm.  
Intussusception from small intestinal polyps and associated with oral pigmentation (Peutz-Jegher syndrome).  
Volvulus of stomach.  
Torsion of appendices epiploica.  
Biliary peritonitis.  
Primary peritonitis.  
Periodic peritonitis.  
Retroperitoneal haemorrhage.

##### BILIARY AND HEPATIC AND PANCREATIC

Acute hepatitis.  
Perihepatitis from hepatic metastases.  
Torsion of gall-bladder.  
Carcinoma of gall-bladder.  
Pancreatic lithiasis.

##### RENAL

Acute hydronephrosis.  
Dietl's crisis.

##### PELVIC

Fibroid undergoing red degeneration.  
Endometriosis.

##### CENTRAL NERVOUS SYSTEM

Herpes Zoster.  
Referred pain from vertebral collapse or disc protrusion.  
Tabetic crisis.

##### MUSCULO-SKELETAL

Epidemic myalgia (Bornholm disease).

##### VASCULAR

Haematoma of rectus muscle.  
Retroperitoneal haemorrhage (patient on anticoagulants).

Mesenteric occlusion.  
Coronary thrombosis.  
Dissecting aneurysm of aorta.  
Periarteritis nodosa.

#### GENERAL MEDICAL CONDITIONS

Food allergy.  
Diabetic ketosis.  
Lobar pneumonia.  
Spontaneous pneumothorax.  
Haemolytic crises with acholuric jaundice or nocturnal haemoglobinuria.  
Sodium deficiency states with uraemia.  
Porphyria.  
Hyperlipaemia.  
Haemochromatosis.  
Hyperparathyroidism.  
Periodic peritonitis.  
Lead poisoning.  
Lupus erythematosus.  
Rheumatic fever with sterile peritonitis.  
Henoch-Schoenlein discase.  
Retroperitoneal bleeding in patients having anticoagulant therapy.  
Arachnidism (lactroductus genus of spiders, 'black wolf' or 'black widow' spider bites).  
Psychoneurotic states (drug addiction, hysteria, Munchausen syndrome).

#### FOOD POISONING

Abdominal pain accompanied by nausea, vomiting and diarrhoea is commonly due to staphylococcal enterotoxin. The pain is often severe but it rarely remains in a single place and is not accompanied by muscular rigidity. The diagnosis is simplified when several members of a family or a party are simultaneously stricken.

#### ACUTE EXACERBATION OF A PEPTIC ULCER

A sudden increase in the severity of pain and its persistence indicates an extension of the ulcer with penetration into surrounding structures. A slight

leak into the peritoneal cavity, quickly plugged by omentum, is probably far more common than is appreciated, and a plain X-ray of the abdomen may often and unexpectedly show air to be present under the diaphragm. If symptoms subside it is best to treat such patients medically and avoid laparotomy.

The full picture of acute perforation is unmistakable and Moynihan's description has not been bettered.

'The picture is so characteristic that error is hardly possible ... For the agony suffered by the patient is almost beyond belief, and is written on every line of a face that speaks of torture. The face is pale, haggard, anxious and appealing, the eyes wide and watchful, the brow and temples bathed in sweat, the hair soaked. The patient struggles for breath in short, panting respirations which are wholly costal, for the diaphragm, being an abdominal muscle, is fixed. Words spoken are jerked out in expiration only; every syllable is part of a deep moan. What strikes every onlooker is that the patient's body is rigid and motionless, no slightest movement dare be attempted. If an endeavour is made to touch the abdomen, the patient's hands are at once lifted in protest and in protection, but the chest and abdomen stay motionless. When examination is made, it is realized at once that the patient is cold; and the temperature will rarely be found more than 95° or 96° F. The abdomen is immobile, and the muscles are taut and rigid: "hard as a board" it is said, but if there is anything harder, it is the abdomen in this time of catastrophe. A further examination of the abdomen will almost always show an area of greater tenderness and if possible, of added rigidity over the area involved in stomach or duodenum.

'When the pulse is examined a great surprise is felt, for it is not increased in frequency nor diminished in volume, blood pressure is not diminished, and in a few cases that we have examined the blood volume is unchanged. There is, therefore, no "shock" ... Shock is never a symptom of perforation. It is a symptom of peritonitis, which follows quickly upon leakage from the stomach or duodenum. In the patient's interest, no less than in the service of truth, we must discharge the word "shock" from its use in this connection.

'The period of initial profound prostration varies in different patients and may be ascribed to variations in the size of perforation, the character of escaping contents — especially in respect to acidity — the general condition of the patient and so forth. Within an hour or two it is followed by a period of reaction, characterized by an improvement in the appearance of the patient, pallor being replaced by flushing, lines of

anxiety being smoothed away, and the body growing warmer. But the pulse steadily rises, the rigid abdomen becomes fuller and since the diaphragm is being pushed higher, respirations become shallower ... Fluids leaking from the stomach tend to trickle down to the right iliac fossa and to overflow into the pelvis. So there may be acute pain or tenderness in the right iliac fossa, and a careless diagnosis of appendicitis may be made.'

The full examination of the chest must never be omitted. Lobar pneumonia may superficially resemble an acute perforation. The finding of basal effusions should at once raise the possibility of spontaneous rupture of the lower oesophagus. Coronary thrombosis may need consideration in the differential diagnosis but even if there is guarding of the upper abdominal muscles there will be no tenderness of the lower abdomen nor on rectal examination. The pain of coronary thrombosis starts behind the sternum even if it later spreads to the epigastrium; the pulse will be rapid, and circulatory failure soon dominates the clinical picture. Dissecting aneurysm of the aorta is, in practice, a more difficult differential diagnosis. The pain is more widely distributed and may radiate down both legs. Like that of acute perforation, it is maximal at the onset and differs from the pain of coronary thrombosis which increases in intensity. Shock may be profound but the abdominal signs are much less evident. The femoral pulses should be palpated as their diminution or absence is a valuable sign. An X-ray of the abdomen may show an excessively calcified or 'double aorta' if there has been a previous attack. Mesenteric vascular occlusion may cause intense abdominal pain which is central rather than epigastric and radiates to the back. The pain tends to have exacerbations and is often associated with vomiting. There is no rigidity and little tenderness until later when peritonitis may develop. The contrast between the severity of the symptoms and the lack of abdominal physical signs is almost diagnostic. A melaena stool is not uncommon with mesenteric obstruction and the patient often shows clear evidence of arteriosclerotic disease.

Perforation of the gall-bladder will give a picture identical with that of acute perforated peptic ulcer. Acute pancreatitis presents a difficult differential diagnosis. The pain is less sudden in its onset, but is very severe and mainly epigastric often with radiation to the back. Tenderness is exquisite and may also be noted in the back in the angle between the twelfth rib and the spinal muscles. Shock is usual, vomiting is troublesome and diarrhoea can occur. Slight icterus may be present but a slatey blue tinge to the lips and lobes of the ears is commonly found as a result of the cessation of diaphragmatic activity or due to the alteration of blood pigments by trypsin. Discoloration

of the skin at the flanks or around the umbilicus develops at a later stage. If suspected, a serum amylase should be urgently requested and is usually markedly increased, e.g. several thousand units compared with the normal of less than 100. With acute perforation of an ulcer there may be considerable elevation to between 300-500 units. Plain X-ray of the abdomen may show some dilated loops of small intestine. Serum calcium may fall quickly. Acute perforation of a peptic ulcer can be extremely atypical when it occurs in patients having corticosteroid treatment or in patients who are acutely ill from some other condition. Perforation occurring after a severe haematemesis can occur without any abdominal tenderness. If a patient becomes desperately ill out of proportion to the disease diagnosed it is important to keep in mind the possibility of perforation and get a plain X-ray of the abdomen to look for gas under the diaphragm.

#### ACUTE APPENDICITIS

Acute appendicitis is characteristically an easy condition to diagnose but can be very difficult. Pain is the first symptom and is paroxysmal at first. It begins usually around the umbilicus, but can originate in the right iliac fossa, particularly when a faecolith is causing appendicular colic. As inflammation develops around the appendix, the pain concentrates in the right lower quadrant and tenderness and sometimes muscle rigidity may be found. Rebound tenderness is a valuable sign. Nausea and vomiting are common and the temperature is slightly raised. The sudden cessation of pain may be ominous as it may signify perforation or gangrene. A leucocytosis is usually found. An atypical picture is found particularly with a pelvic or a retrocaecal appendix. Rectal tenderness may be a valuable sign.

Constipation is common but occasionally diarrhoea may occur with a pelvic appendix especially when there is a localized abscess. In children and in the elderly incomplete clinical pictures are commonly found. Appendicitis is one condition in which looking at the tongue can really help; a clean tongue is seldom if ever seen with acute appendicitis. The tongue is coated and there is foetor oris.

The differential diagnosis of acute appendicitis includes a slow leak from a peptic ulcer with fluid travelling down to the right lower abdomen. Pneumonia with referred pain from diaphragmatic irritation may simulate appendicitis and the absence of rebound tenderness together with an increased respiration rate may be useful points against appendicitis. A mid-cycle ruptured Graafian follicle may be impossible to distinguish from appendicitis in a woman during the reproductive years of life. A ruptured tubal pregnancy may also come under consideration. Tenderness on vaginal

examination together with the menstrual pattern may point towards the diagnosis. Red degeneration of a fibroid or torsion of an ovarian cyst may be suspected from pelvic examination and the history. Acute salpingitis with right-sided pain will be differentiated by the finding of cervical discharge and localized tenderness on pelvic examination.

The clinical picture of acute appendicitis with diarrhoea as a dominant symptom suggests acute regional ileitis.

Diverticulitis of a solitary caecal diverticulum is an occasional finding and may simulate exactly an acute appendicitis.

Lymphadenitis of the mesenteric glands presents a real difficulty in diagnosis from acute appendicitis especially in children. A gradual onset, more generalized tenderness and low leucocyte count and a clean tongue may lead one to suspect the condition but pre-operative diagnosis may be impossible and an appendicectomy with removal of a normal appendix is entirely justified.

### INTESTINAL OBSTRUCTION

Pain is usually the first symptom with intestinal obstruction of mechanical origin and is characteristically colicky and intermittent. In each bout the pain increases in crescendo and after being sustained severely for a few minutes suddenly ceases. Pain is more severe with small intestinal than large bowel obstruction. Vomiting will depend on the type and site of obstruction but generally the higher the obstruction the more severe the vomiting. On examination it may be possible to see a distended loop of bowel and evidence of hyperperistalsis with high-pitched tinkling bowel sounds may be heard on listening to the abdomen. A plain X-ray of the abdomen with the patient erect should be taken for evidence of gas distribution and fluid levels if there is doubt about the diagnosis.

### DIVERTICULITIS

With diverticulitis, except for the uncommon solitary diverticula on the right side of the colon, the pain and tenderness is situated in the left lower quadrant and constipation is more common than diarrhoea.

### CONSTIPATION

Constipation can cause acute abdominal pain but only when the bowel is heavily overloaded with faeces. The patient may not be aware of constipation as there may be retention overflow of faeces. The faeces can usually be felt on abdominal examination. In severe degrees, particularly with myxoedema, constipation may give rise to the complete picture of intestinal obstruction.



## GENERAL MEDICAL CAUSES

The general medical causes of less common crises of abdominal pain constitute an interesting group and a number can strike down an individual who has been in seemingly excellent health.

Food allergy such as extreme sensitivity to onions or shellfish, can induce very severe abdominal pain as a leading symptom, but usually these patients are in no doubt as to the cause of their symptoms as they are aware of their sensitivity to the offending food, although sometimes this may have been taken accidentally. It is possible for sensitivity to be acquired later in life and this happens sometimes with shellfish particularly. The various metabolic disorders include acute porphyria, essential hyperlipaemia and haemochromatosis. Porphyria, which may cause crises in otherwise healthy people, can be readily diagnosed by a simple urine test for porphobilinogen.

Essential hyperlipaemia may also affect otherwise healthy people with crises of upper abdominal pain and is associated with hepatosplenomegaly and a grossly milky serum but the blood cholesterol may be hardly raised. Diagnosis cannot be missed if the serum is inspected.

Haemochromatosis can give rise to quite severe crises of upper abdominal pain although the mechanism of this pain remains obscure. The slatey grey pigmentation of the patient may bring the diagnosis to mind particularly if there is hepatosplenomegaly.

Uraemic states particularly those associated with low serum sodium can give rise to a severe abdominal pain with nausea and vomiting but the diagnosis here is usually obvious. The patient either has obvious manifestations of a chronic nephritis, which happens to be a salt-losing variety or there has been some obvious cause of primary loss of electrolytes from the body.

Haemolytic crises associated with acholuric jaundice or nocturnal haemoglobinuria will usually provide either some clinical evidence of jaundice or darkening of the urine. Inspection of the serum and a reticulocyte count are useful screening tests.

The endocrine disorders have to be kept in mind. Hyperparathyroidism will cause nausea and vomiting with gastric stasis but acute abdominal pain can be a feature even without an associated peptic ulcer.

Diabetic ketosis can present a real pitfall in diagnosis but the history of thirst and polyuria should suggest the diagnosis.

An acute Addisonian crisis in Addison's disease or haemorrhage into the adrenal gland may cause prostrating pain. The latter can happen occasionally in apparently normal people.

Retroperitoneal haemorrhage in patients on Phenindione (Dindevan) therapy may present with severe crises of pain.