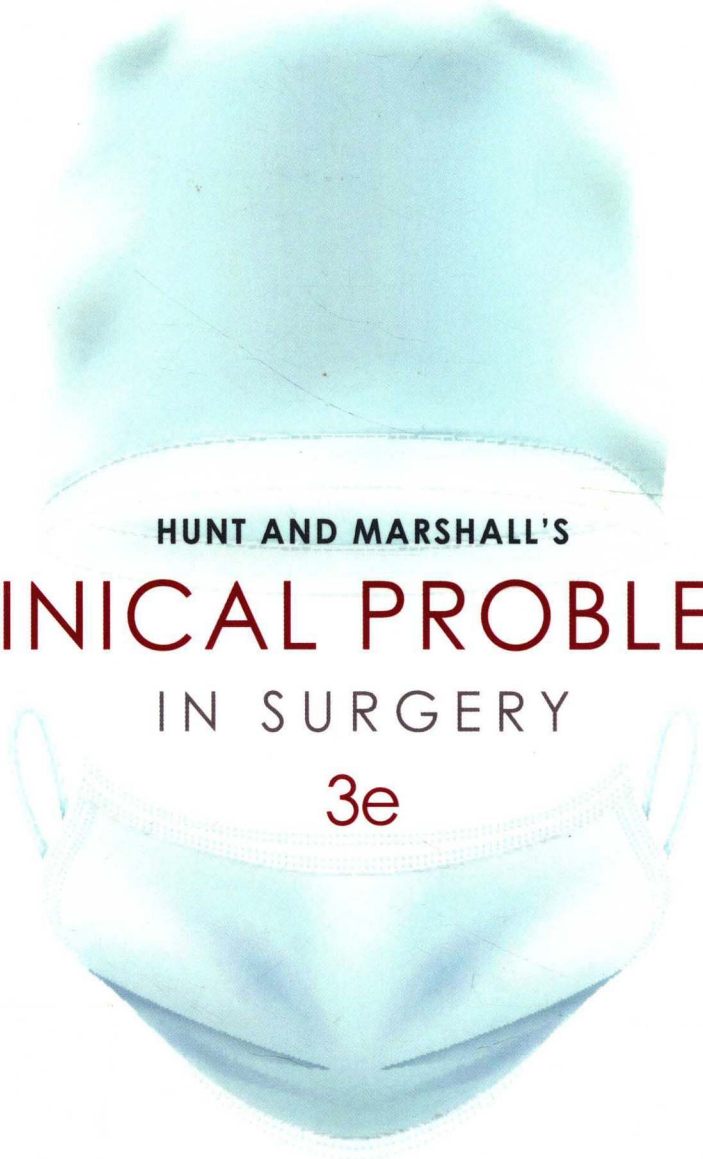

HUNT AND MARSHALL'S

CLINICAL PROBLEMS IN SURGERY

3e

JULIAN A **SMITH** JANE G **FOX** ALAN C **SAUNDER** MING KON **YII**

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FOREWORD

It gives me great pleasure to be invited to pen the foreword for this multi-author textbook of clinical surgery. Three of the editors, also Victorian surgeons, were classmates of mine at medical school. They and Mr Yii have all forged superior clinical reputations with significant roles at the Monash Medical School.

One's early medical career should be developed around robust clinical methods, dealing with the whole patient. Whether the junior doctor has come from an undergraduate or postgraduate medical school matters little, as the doctor comes into the workplace with the individual's knowledge, skills and attributes. As their clinical career evolves, it needs to be just that – a clinical career, dealing with patients, their problems and the social context.

Dialogue utilising medical knowledge and skills is fundamental to this, and the authors are to be commended for promoting such. The dialogue occurs throughout taking the medical history and performing a physical examination.

The book also contributes a clinical approach to common causes of clinical symptoms and syndromes, with sensible discussion around the use of investigations to confirm the diagnosis. This is about how superior clinicians work, rather than long differential diagnosis lists and multiple investigations. As part of this, the limitations of the investigations are described as part of a working approach. This approach extends to the need for surgery without a precise diagnosis such as in a sick patient with peritonitis.

The authors, therefore, describe applied surgical reasoning skills that should assist the reader with developing their own aptitude for judgement and clinical reasoning. By making use of informative diagrams and images, with boxed summaries, the rationale for management is well displayed. This 3rd edition of *Hunt and Marshall's Clinical Problems in Surgery* is commended to medical students, junior doctors and those seeking a review textbook prior to significant postgraduate examinations requiring display of reasoned surgical knowledge.

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PREFACE

Hunt and Marshall's *Clinical Problems in General Surgery* was published in 1991. At that time teaching of the clinical sciences occurred during the later years of the medical courses and was largely based in discipline-oriented surgical departments. Problem-based learning (PBL), at that time, was the province of the educationally bold. Now the majority of medical courses present an integrated clinical curriculum, and problem- or case-based learning has a significant place. The delivery of adult healthcare still depends on specialist and subspecialist units, although there is a greater recognition of the benefits of multidisciplinary care in optimising outcomes for patients.

Where, then, does this contemporary text fit?

It has not been primarily designed to support a PBL process, although it may serve as a very useful reference, but rather as an adjunct to developing the skill of clinical reasoning. Well-developed reasoning is an essential clinical skill that distinguishes the 'expert' from the 'beginner'. It is recognised that learning clinical reasoning is a step-wise process. A novice medical student accumulates data from a clinical history and examination and then attempts to make sense of it. An expert will direct the history and examination in such a way that each step is informed by the last. For all of us there will be times when a diagnosis and clinical management plan are not immediately obvious, and to use a problem-oriented clinical approach will allow us to progress our understanding and the patient's care.

Accurately defining a clinical problem requires knowledge and discipline. It is different from the PBL process where the problem is used to stimulate curiosity and increase the learner's knowledge base. It is a sophisticated, integrated process and needs to be practised. Importantly, there is strong integration of the basic and clinical sciences.

The problem-oriented clinical record is a way of demonstrating and clearly recording that process, such that we have a broad-based assessment of our patients (using a biopsychosocial model), as well as plans to progress their care.

Clinical science in adults, within an integrated curriculum, often has an emphasis on internal medicine, with surgery as a possible management option. While this has a parallel in practice, for example, in assessing and managing ischaemic heart disease or inflammatory bowel disease, we feel that other areas where surgical care is the principal management option may receive insufficient emphasis as clinical entities, which may lead to significant and potentially life-threatening delays in treatment. Examples include the acute abdomen, acute limb ischaemia, abscess formation and trauma.

Clinical examination texts are often written as aids to exam candidates and these do not always provide sufficient support to students, who should be encouraged to think about the symptoms and signs rather than simply develop a fluent examination performance. That is, they need to develop robust skills in clinical reasoning.

The problem-oriented clinical approach also facilitates a critical learning strategy – the art of clinical conversation. Students and practitioners often have an investment in being correct before saying anything and this can be a barrier to developing clinical reasoning and to solving a clinical conundrum. If, as a medical student, you are able to define a patient's problem, you will then be able to discuss it with a peer, a supervisor or another member of the surgical team. This is an excellent method of optimising the learning opportunities in a complex and sometimes stressed clinical environment, where short inpatient stays are desirable and experience in ambulatory settings may be limited by access or the available time for patient contact.

The third edition of Hunt and Marshall's *Clinical Problems in Surgery* includes an extensive revision of each chapter, with the inclusion of additional figures and images. Particular attention has been paid to Chapter 7 and a new chapter addressing common ophthalmological problems has also been added in this edition.

Julian A Smith
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ACKNOWLEDGEMENTS

In the 1991 edition of *Clinical Problems in General Surgery*, Vernon Marshall and Phillip Hunt acknowledged the contribution of their undergraduate medical students and patients to the development of the book. Both authors had a strong interest in medical education, particularly in the importance of clinical experience in surgical disciplines. They also possessed a profound clinical curiosity, which was reflected in both their choice of clinical speciality and in their approach to teaching. Vernon Marshall developed an interest in transplant surgery at a time when transplantation of organs was a novel and challenging area of clinical practice and research, as well as in endocrine surgery, his subsequent area of clinical focus. Phillip Hunt, whose main interest was in upper gastrointestinal surgery, was instrumental in developing a management strategy for gastrointestinal bleeding with a dramatic reduction in patient mortality, reflecting his analysis of clinical situations and ability to evaluate the paradigms of practice. As the senior members of the Monash University Department of Surgery at Prince Henry's Hospital and at Monash Medical Centre in Melbourne, both took a weekly case presentation with particular emphasis on identifying and defining the patient's problems, developing diagnostic and therapeutic plans and discussing the outcomes of treatment. These professors expected the student presentations to be of a high standard – for the students to develop sophisticated clinical reasoning skills and to impart that knowledge to their colleagues. Their ability to set high standards and to encourage clinical curiosity, interest in every aspect of a patient, and critical analysis of information and assumptions, set them apart as surgical educators. Both strongly encouraged the preparation of the second edition.

Since the publication of the second edition Phillip Hunt has sadly died. Vernon Marshall remains active through the Australian Medical Council in the education of international medical graduates. In recognition of the outstanding contribution both have made to undergraduate and postgraduate surgical education, we also dedicate the third edition to them.

Our contributors have been superb in providing chapters in the style originally established by Hunt and Marshall and we thank them all. We also acknowledge the outstanding support provided by the publishing team at Elsevier, in particular Neli Bryant, Larissa Norrie, Anitha Rajarathnam, Matt Davies, Jon and Fiona Forsyth, and Karen Forsythe.

Finally, the third edition would not have been possible without the constant support and tolerance of our spouses, Sally Smith, Ian Russell, Kate Saunder and Joyce Yii, for which we are eternally grateful.

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INTRODUCTION

Patients present with clinical problems, not with defined diseases. This book discusses common clinical problems encountered in surgical practice, how to solve these problems and how to devise a plan to manage them expeditiously and safely. Experienced clinicians approach diagnosis and management in sequential steps. They first try to define the patient's major clinical problem. This may be expressed as a symptom (back pain, intermittent exertional leg pain, difficulty swallowing), a physical sign (goitre, hepatomegaly, swollen leg) or a grouping of symptoms and signs comprising a definable syndrome (renal injury, anaemia, acute abdomen, hyperthyroidism). The problem may seem focal or regional (a lump or an ulcer, nipple discharge, hernia); this often has operative surgical implications but may indicate merely a focal manifestation of a systemic problem.

After defining the main problem, its common causes are considered. If the clinical pattern matches the usual pattern of one of these common causes, a provisional diagnosis is rapidly made on the basis of the clinician's previous experience and knowledge. If all aspects do not fit the usual pattern of a common cause, it will be necessary to consider other and less common causes or the possibility of more than one disease process. Remember, it is more common to see an unusual presentation of a common disease than a rare disease. While Occam's razor encourages us to explain all the patient's problems with a single diagnosis, this is not always possible. A differential diagnosis should also be considered, especially if a single diagnosis is not immediately apparent. Furthermore, with the current ageing population often having numerous pre-existing conditions, it is possible that a given patient may indeed have more than one diagnosis. Therefore, assessment often requires the application of biochemical, imaging and other tests to clinch the diagnosis. Identifying one or more major problems comprises the basis of clinical diagnosis.

A systematic history is taken as a secondary exercise. This aims to detect the presence of concurrent diseases that might need treatment or may influence surgical decision making and subsequent management, thereby factoring for possible complications and predispositions (secondary problems) of the disease causing the main problem. The mature clinical approach is therefore quite different from the systematic 'questionnaire' often used by students. It is empirical, eclectic and sharply focused. It is continually audited and refined as one's clinical experience grows, new knowledge is assimilated and clinical judgement improves. It seeks to discard as rapidly as possible unhelpful clinical 'noise' while maintaining sympathetic communication with the patient.

As clinicians seek a recognisable pattern during the clinical history, examination and subsequent investigations, they often build a composite diagnostic picture in a step-wise fashion, using if–then hypotheses (if the lump is in the thyroid then it should move on swallowing) and yes–no answers. Treatment plans often proceed in the same manner in an integrative sequence (if shock is solely hypovolaemic then it will respond to identifying and stopping the volume loss and refilling the vascular tree). In emergency situations, treating the major problem (e.g. cardiac arrest) must precede specific diagnosis of the cause. These processes can be represented by a decision tree or algorithm; the algorithm pathway leads the clinician along correct pathways of management. This method is particularly valuable in formalising clinical practice among doctors working together in a group and often provides protocols to guide medical staff about short segments of management. In practice, the method has limitations when applied to clinical students, who need to develop the skill of clinical reasoning and to understand the genesis of the algorithm. Each step or branch in the diagnostic and treatment pathway requires weighing of alternatives (which, if any, investigations are required for this patient with acute abdominal pain?). Weighting is influenced by: knowledge of the prevalence, natural history, common presentations and prognosis of various diseases; the patient's age and the presence of associated diseases or complications; the sensitivity, specificity, predictive value, cost and availability of investigative tests or procedures; and the experience and skill of the clinician. To acquire such clinical prowess to facilitate effective weighting takes time and effort.

Doctors also vary considerably in their sense of comfort and confidence in reaching a diagnosis on the evidence

available from the history, physical examination and investigations. Ultra-cautious individuals, and those lacking in experience and judgement, tend to continue to accumulate clinical and investigative data in support of a definitive diagnosis even though each additional test will not significantly alter the treatment plan. Medical students need to develop an appreciation of the natural history and prognosis of individual problems and their causative diseases and an ability to accurately define the patient's problem while maintaining a holistic approach to the unique requirements of the patient. This is best achieved by taking every opportunity to see as many patients as possible and by being involved with the treating team. These aspects usually require an in-depth consideration of the various causes of common problems. The learning curve from this exercise progressively improves the student's ability to derive and shape diagnostic and treatment plans. This book aims to help medical students answer the questions raised at each branch of the decision tree and to construct an appropriate pathway of management for each clinical problem.

Identifying the main problem can be quite difficult. Defining major problems and eliminating distracting elements demands accurate knowledge of the probable significance of various symptoms and signs – which are important and which are not. Therefore, dysphagia is always likely to be a significant major problem, backache much less commonly so. Difficulties in obtaining a coherent picture may be due to the questioner's inexperience, to language problems or to the patient's lack of insight. Symptoms such as pain can often be best categorised by using the site of the pain and the mode of onset to define the problem (e.g. acute right iliac fossa pain). A major problem in one clinical circumstance can be a secondary complication in another situation. Two examples follow.

1. Iron deficiency anaemia, discovered in a patient who is otherwise asymptomatic or suffers from vague deterioration in health, is a very significant clinical problem. Anaemia found in a patient presenting with increasing constipation is secondary to the main problem of altered bowel habit. Anaemia in this instance suggests that the main problem is caused by a colonic cancer (Fig 1) and that preoperative preparation needs to include correcting the anaemia to enhance the safety of surgery.
2. Weight loss is relatively uncommon as a sole clinical problem. In community practice, weight loss may be a presentation of endogenous depression but may be an early sign of organic disease. In hospital practice weight loss is commonly associated with major clinical problems and again has important diagnostic and therapeutic connotations. Unexplained weight loss requires a thorough clinical search for the underlying cause, which may not always require a surgical solution. Marked weight loss associated with jaundice suggests a malignant cause. Under these circumstances it may either be an indication for preoperative nutritional supplementation in preparation for surgery or a sign of advanced disease and potentially a contraindication to surgery. Many intercurrent clinical problems may increase the risk of surgical procedures and will need assessment using a careful systems review and the appropriate investigations.

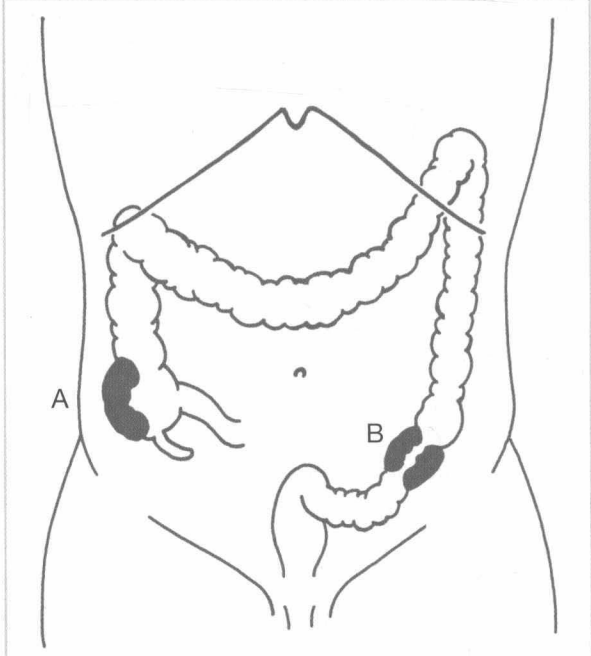

FIGURE 1 Iron deficiency anaemia may be **A:** the primary presentation of an occult carcinoma of the caecum; **B:** a secondary problem when carcinoma of the sigmoid presents with altered bowel habit

Broadly similar problems often have strikingly different causes. A patient bleeding from the gastrointestinal tract via the anal canal may either: present with symptoms of anaemia (occult bleeding); have passed a large tarry stool (melaena); have had several bowel actions consisting almost entirely of copious fresh blood (acute colonic haemorrhage); or have noted blood on the paper or pan, with or without pain, during a bowel motion (defaecatory bleeding). The common causes (and treatments) of these various presentations are quite different. Once gastrointestinal bleeding via the anus is recognised to comprise at least four different syndromes (problems),

diagnosis of the most likely cause is considerably enhanced as are treatment plans for each problem (Fig 2).

Students usually begin clinical medicine by taking complete case histories. The initial objective is not primarily to make a diagnosis but to establish communication and rapport with the patient and to learn the basic skills of interview and examination. Many textbooks concentrate on these skills, while others are encyclopaedias of disease with detailed descriptions of potential diagnoses. Both are essential educational aids for students, but experienced clinicians generally adopt an apparently intuitive process of problem definition and interpretation derived from the history and physical examination, aided by a few investigations. This book aims to help students achieve this. The various forms of disease presentation may be difficult to derive from reference texts. An account of a specific disease such as duodenal ulcer certainly will include a description of clinical features and complications. Duodenal ulcer can present as chronic dyspepsia or with various complications – an acute exacerbation, perforation, duodenal stenosis or upper gastrointestinal haemorrhage (Fig 3). This text will discuss not duodenal ulcer as such, but rather the problems of acute and chronic epigastric pain, the acute surgical abdomen, haematemesis and melaena, and vomiting. For each of these presentations duodenal ulcer is discussed as a possible cause, but the disease is considered secondarily – as one of the common causes of these forms of presentation – and with the perspective and weighting appropriate to the likelihood that duodenal ulcer is causing the problem. The clinical problem with which a disease presents largely determines the approach to management.

Defining the major problem (e.g. haematemesis with shock) is often the most critical step to be made in planning early diagnosis and effective treatment. Associated shock is a major determinant of the likely need for early intervention in

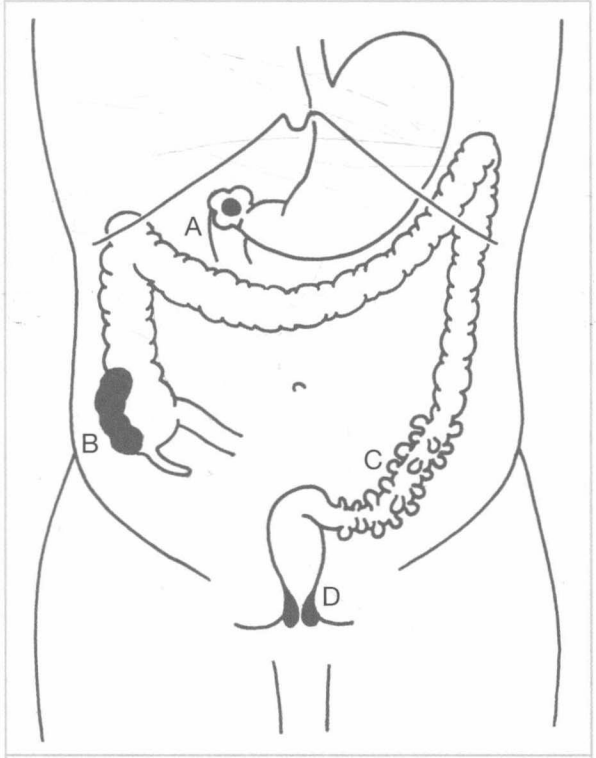

FIGURE 2 Forms of presentation of gastrointestinal blood loss **A:** melaena from a duodenal ulcer; **B:** occult blood loss and anaemia from a caecal carcinoma; **C:** acute colonic haemorrhage from diverticular disease; **D:** defaecatory bleeding from haemorrhoids

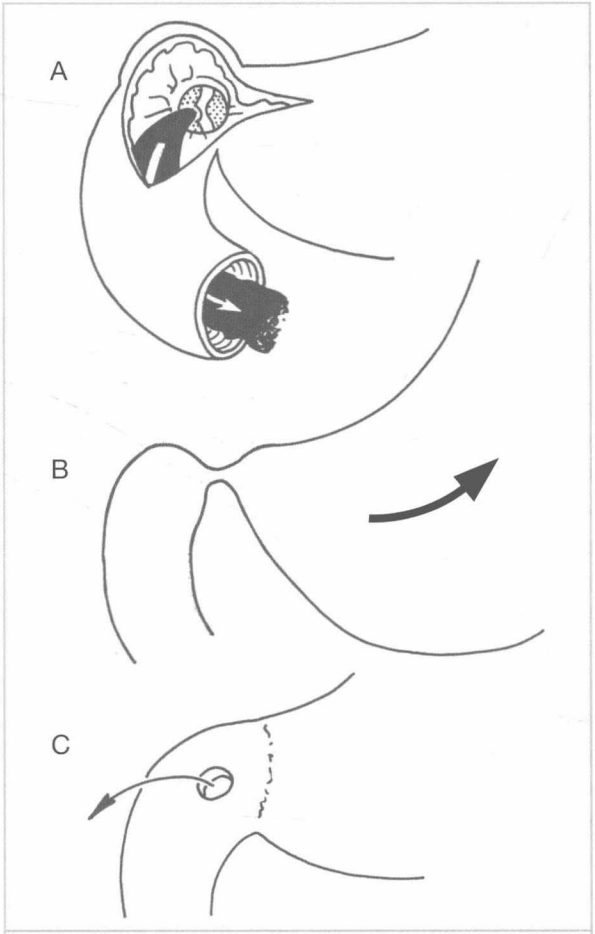

FIGURE 3 Forms of presentation of duodenal ulcer **A:** haemorrhage presenting as haematemesis and melaena; **B:** pyloric stenosis presenting as vomiting; **C:** perforation presenting as an acute abdomen. Duodenal ulcer most commonly presents as chronic epigastric pain.

a patient presenting with upper gastrointestinal bleeding. Over a time interval varying with the urgency of the case, optimal resuscitation is achieved, the cause is diagnosed as rapidly as possible, concurrent medical illness is controlled and the correct procedure is performed for the pathology found. The patient must always be made as safe as possible for treatment. We have therefore included discussion of common and important medical disorders that influence surgical management and determine procedural risk.

These examples indicate that definition of clinical problems is not just a matter of identification. Their diagnostic and therapeutic significance must be recognised and weighed (and often qualified by associated problems influencing the degree of surgical risk).

Focusing on the problem rather than the disease demands six main steps.

1. Identify and define the clinical problem(s). Begin emergency treatment of life-threatening complications.
2. Consider common causes.
3. Compare the patient's problem with the usual clinical pattern of the common causes.
4. Review less common causes.
5. Check for associated problems, predisposing causes and determinants of surgical risk.
6. Choose diagnostic and treatment plans.

The book follows this format. Individual chapters describe methods of diagnosis and treatment for each presenting problem. Individual diseases are discussed in detail when the problem under question represents the most common presentation of that disease. Selective guides to history taking and examination relevant to a region or system introduce related problem groups. In our medical curriculum, an introductory period – concentrating on the clinical skills of communication methods, history-taking and physical examination – is accompanied by and integrated with the introduction of concepts of clinical problem solving evolving to a progressive appreciation of disease processes and their management and prevention, with the senior students becoming members of the surgical team during clinical rotations. These techniques formed the basis of surgical teaching and clinical clerking within surgical rotations in the previous six-year medical course at Monash University. With the advent of integrated medical teaching at Monash University and other medical schools the benefits of discipline-specific teaching have come into question. The presentation of clinical problems in surgery serves as a tool to develop clinical reasoning that will be applicable to other areas of practice and experience and ensures that important principles of practice best illustrated in a surgical context are maintained, such as the acute abdomen. There is also ample confirmation of the need to integrate basic surgical science into clinical practice, particularly anatomy, physiology and pathology.

THE PROBLEM-ORIENTED CLINICAL APPROACH

Identifying, defining and describing patients' clinical problems is integral to helping them. Accurate documentation is important in clarifying a clinician's diagnosis, in management planning and in communicating with the patient, their families and other staff in the healthcare team. It aids clinical reasoning, at least in part, by making it explicit.

The problem-oriented clinical approach (POCA) is a useful tool that helps organise clinical data in a logical manner by identifying problems that need to be solved in a format that makes problem solving easier. A POCA records the data and the problem-solving process in a coherent and readily retrievable way.

Like many tools, the POCA is potentially cumbersome; one must ensure that the system remains subservient to its purpose of aiding communication, patient care, data recording and education. Its purpose is served if information is gathered such that the active major problem is correctly identified, a prompt diagnosis is made and the best and safest solution to the problem is chosen.

The active major problem may be associated with a complication or subsidiary disorder that in itself often requires attention before definitive surgery. Therefore, a secondary problem of cholangitis in a patient presenting with jaundice will modify management significantly. Patients frequently have associated medical problems that, although inactive, influence treatment. In surgical patients these are of great relevance to the safety of surgery. For example, chronic obstructive pulmonary disease (COPD) is a frequent contributor to morbidity and mortality after surgery.

The POCA begins with a list of major clinical problems derived from the database as follows.

1. Collect and record the database

Take a history and examine the patient

A comprehensive history and examination are obtained by a combination of listening actively to the patient, logical interpretation, supplementary questioning of the gathered data as it emerges and following up leads as they are teased out of the patient's presentation.

A thorough 'screening' of areas not included in the preceding information is necessary, incorporating a full systems review, family history, past history, social history and recent medications. The past history may reveal antecedent symptoms that are harbingers of the current illness; these thereafter

will be considered as part of the history of the present illness. Additional data may be obtained from relatives, from previous records or other treating practitioners, or from laboratory or imaging investigations.

Record the data in a systematic manner

This will minimise omissions, aid in data retrieval and help to emphasise important aspects.

The following student POCA exemplifies such a systematic approach.

1 Record the **main complaint**.

Severe, generalised abdominal pain for the past eight hours.

2 Write a **patient profile**. This should be a brief pen portrait of the patient, setting the problem(s) in a socioeconomic context. Such things as cultural heritage, occupation, marital status and housing may be relevant.

Mrs S, a 69-year-old pensioner, lives alone in her own house in Dandenong. Her husband died 6 years ago. She has a supportive family of three grown children all living in suburban Melbourne.

3 Record all the subjective data (S) relating to the **present illness or illnesses**. This should be arranged chronologically and should note any subsidiary problems complicating the major active problem – particularly any demanding immediate attention. Subjective (S) can be used as a synonym for history and objective (O) for the physical examination and the laboratory, radiological or other objective findings. A flowchart can be a very useful way of documenting a long and complicated illness with frequent admissions.

4 Record **risk factors**, **systems review**, **past history** and **family and social history** under separate headings.

Certain diseases have characteristic risk factors (e.g. vascular disease – smoking, diabetes). It is often helpful to list whether the patient in question has one or more of the known risk factors for the disease, both prospectively and after a clinical diagnosis has been made.

5 Objective data (O). Record the **physical examination findings** of systems relevant to the presenting problem, including important associated problems as well as findings in other systems of importance in management (e.g. those relevant to safe anaesthesia and surgery, such as cardiovascular status).

6 Record any other objective data from laboratory investigations and previous records.

The data on Mrs S is developed (with parenthesised explanatory notes) as follows.

History of the presenting complaint
Subjective data (S)

Mrs S has been admitted because of severe periumbilical pain of sudden onset, which then spread to involve the whole abdomen over the next several hours. She also noticed pain in the left shoulder. Any movement made the abdominal pain worse. Her local doctor was called (Dr T) and referred her to hospital. She has no previous history of abdominal pain.

Systems review revealed that she has arthritis affecting the hands and feet; moderate hand deformities cause some disability and pain requiring active treatment (this seems to warrant a place as a separate, active problem). No other relevant symptoms on systems review.

(An analysis of the past history might have revealed that the present illness manifested itself years in the past; previous symptoms suggestive of a longstanding history of duodenal ulcer would have become part of the history of the presenting complaint.)

Past history

(a) Rheumatoid arthritis for 8 years – mainly hands and wrists (this will be discussed in the current problem list). On analgesics and non-steroidal anti-inflammatory agents (this fact could be a risk factor for the main problem).

(b) In hospital last year with a myocardial infarct, there were no complications or sequelae (this may, however, be relevant to her current problem, especially if surgery is needed).

(c) Tonsillectomy as a child (this seems both inactive and irrelevant to the main problem; leave it as past history).

Risk factors – takes anti-inflammatory agents for rheumatoid arthritis; no history of cigarette smoking.

Family and social history – parents both dead: mother stroke, father old age; social history, as above.

Medications (agents, indications, dosage and side effects) – ibuprofen ('Brufen') 400 mg tds: non-steroidal anti-inflammatory drug; aspirin i-ii qid prn: analgesic.

Objective data (O)

Now (6 hours after onset): in severe pain. On examination: generalised, marked abdominal tenderness and board-like guarding and rigidity. Silent abdomen with absent bowel sounds. Rectal examination normal. Not shocked, BP 120/70, P 90, regular, T 37.1 C.

(At this point in the record a brief account can be given of the examination findings of other systems relevant to the surgical management of the current problem. These aspects appear subsequently in the record as separate problems

where discussion concentrates on their management and significance in the longer term. In this instance the past history of myocardial infarction indicates that protection of cardiovascular function is of particular relevance to safe and successful surgical treatment.)

Cardiovascular assessment: no hypertension, heart not enlarged, no signs of heart failure, heart sounds normal, no murmurs.

(A brief summary of the remainder of the physical examination can also be set down at this point in the record – see later.)

Investigations to date: An erect plain x-ray of the chest and abdomen showed free gas under both sides of the diaphragm.

(Other radiological studies and additional investigations will appear under a subsequent assessment and diagnostic plan unless they are immediately available.)

2. Constructing a problem list

Constructing a logical problem list is the key to recording the findings of the POCA. The outcome of this will be a problem-orientated medical record (POMR). Identifying problems and listing them logically is the most important step in devising a database so that a diagnosis can be made and the correct treatment chosen.

First, there will be the presenting problem that may, by this stage, be a precise diagnosis (e.g. perforated duodenal ulcer) or may be a symptom (e.g. acute upper abdominal pain) or a sign or a sign/syndrome/symptom complex (e.g. 'acute abdomen', 'shock, 'peritonitis'). This depends on the stage at which the patient is assessed. The problem recorded should be the most specific statement that can be made about the clinical state or diagnosis at that time.

Then, any other significant problems derived from the database should be listed, all with a number and a title. Problems may be active (A) or inactive (IA) and this should be recorded on the problem list along with the date of onset. Other problems judged to be of little current significance may be left noted in the past history.

Mrs S's problem list at the end of the history and examination, before investigations, was outlined as:

PROBLEM NUMBER	TITLE OF PROBLEM	ONSET	STATUS
1	Acute abdomen	20.07.15	A
2	Rheumatoid arthritis	2012	A
3	Myocardial infarction	2014	IA

Some useful hints on making a problem list are:

- The list must be flexible enough to take account of changing situations; however, stability is desirable because subsequent records will relate to the established list.
- If possible, make the problem list simple. Only list major or significant problems; do not fragment the list by dividing one problem into many problems when they are time-related and clearly all likely to be the symptoms or complications of one disease. If several problems can be grouped into one major problem with several manifestations or presentations, use this approach. The various manifestations of malignancies or vascular or metabolic diseases often lend themselves to this approach. For example:

Carcinoma of the left breast with metastases

- Left pleural effusion A
- Cerebral metastases – increased intracranial pressure A
- Pathological fracture of right femoral neck A

or

Atherosclerotic vascular disease

- Ischaemic heart disease
  - Congestive heart failure (presenting problem) A
  - Previous myocardial infarct (2014) IA
- Left cerebral haemorrhage (2014): residual right hemiplegia

or

Insulin-dependent (type 1) diabetes mellitus

- Presenting problem
  - Ketoacidosis A
  - Associated urinary tract infection A
- Retinopathy
- Peripheral neuropathy IA

If the nature of a problem becomes clearer, change the title but keep the number.

If the problem list is unhelpful or becomes incoherent as the real story unfolds, it should be changed.

3. Assessment and plan

The next step is to record the initial assessment (A) and plan (P) for each active problem. The plan combines diagnostic and treatment components. Returning to the sample case:

 # 1 Acute abdomen

A. Acute abdomen with generalised peritonitis. Free gas under the diaphragm indicates a perforated viscus. Perforated duodenal ulcer is the most likely diagnosis. No signs of severe dehydration or shock.

P. Requires urgent laparoscopy after preoperative preparation by intravenous fluid replacement, prophylactic antibiotics and thromboprophylaxis.

The treatment plan in a surgical patient can be organised as follows:

- the preparation necessary before any planned operation
- the control of concurrent medical illness
- the operative procedure and findings.

Measures used to manage concurrent medical illness should be briefly detailed and the clinical response of the patient noted. For example, Mrs S might have been on long-term steroid treatment for her arthritis. Consideration of possible side effects of such treatment would then be needed. Temporarily increasing steroid dosage and employing a non-oral route of administration while fasting during the perioperative period might be recommended to diminish the risk of a postoperative Addisonian crisis.

Operations and their dates (naming the responsible consultant surgeon) or other key events should be recorded on the problem list. The example problem list is shown below.

PROBLEM NUMBER	TITLE OF PROBLEM	ONSET	STATUS
1	Laparoscopy, omental patch repair of duodenum and peritoneal lavage (Dr M): 20.07.15	20.07.15	A
2	Rheumatoid arthritis	2012	A
3	Myocardial infarction	2014	IA

Once the problem list has been constructed, subsequent entries in the record should refer to a specific problem (identified by number and title). Postoperative complications are similarly oriented unless of long-term significance, when they could become a major problem.

The operative incision, procedure and findings should be briefly described.

Operation 20.07.2015 (Dr M)

Laparoscopy under general anaesthesia confirmed perforation of the anterior wall of the first part of the duodenum with moderate peritoneal contamination. An omental patch was secured over the perforation laparoscopically and the peritoneal cavity copiously lavaged. Postoperative antiulcer medication was ordered.

Now document the other problems.

 # 2 Rheumatoid arthritis

A Chronic, active disease. Joints involved and degree of disability are noted.

P Review current arthritic medication regimen with her local doctor.

(Note that problem # 3 does not appear here because it is inactive.)

4. Progress notes

Record these under the number and title of the relevant problem with the date and the time under recorded or assumed headings:

Subjective

Objective

Assessment

Plan

A simple routine can be followed when assessing progress in a straightforward postoperative case. Most of the negative observations need not be recorded and, if no significant complication has occurred, then only brief notes about normal progress are necessary. The subjective assessment is most important; a patient who feels well and has little pain is nearly always doing well. The next step is to observe the nursing charts and note the values and trends in the patient's temperature, pulse rate, respiratory rate and blood pressure. Fluid balance is checked by noting inputs and outputs since surgery. A raised temperature early after surgery is usually due to atelectasis. The common sources of postoperative fever provide a useful guide to those aspects of physical examination that need regular attention. These sites are the chest, the intravenous drip site, the wound, the urine (particularly in patients who have been catheterised during surgery) and the calves for evidence of deep venous thrombosis. If a wound complication is suspected, the dressing will usually need to be removed and the wound carefully inspected.

Write succinct progress notes; for example:

 # 1 Perforated duodenal ulcer: postoperative course

20.07.2015, 10.00 am

S Complains of increased pain in umbilical port site

O T38.4, P 100. Wound is reddened and oedematous, with purulent discharge and surrounding cellulitis

A Wound infection

P Remove sutures, swab of pus for culture

The complication of postoperative wound infection and abscess is then added to the problem list under heading # 1.

5. Discharge summary

The discharge summary should clearly and concisely convey the essential features of the patient's illness. One copy is sent to the patient's local medical officer (LMO) and another remains in the hospital record for easy reference by clinicians reviewing the patient post-discharge or on subsequent admissions.

The source of the referral and the name of the patient's LMO should always be checked and recorded. It is essential that the doctor of first contact, the patient's LMO and the operating surgeon receive full information (including a copy of the discharge summary) at the time of discharge. *Prior telephone communication should have been made by the consultant or registrar if the discharge summary is likely to be delayed for any reason, such as waiting for histology or other results.*

Particularly with chronic illnesses, such as cancer and degenerative or metabolic diseases, the discharge summary should also state what the patient has been told of the disease and its prognosis and what has been told to relatives.

The completed record at discharge should contain the following items.

1. Problem list
2. Discharge and problem summary: a narrative of the course of events during the current admission including details of operative dates, findings, procedures done, histopathology and surgeon's name; a concise note is written under each problem to indicate the current status, future plans and, if relevant, the prognosis
3. Medications on discharge
4. The patient's and relatives' knowledge of the disease (when relevant)
5. Follow-up
6. Details of the patient's LMO and other consultants to whom copies of the summary should be sent

The completed POMR and discharge summary for Mrs S can now be detailed.

Medical record

Introduction: *Mrs S was admitted because of severe periumbilical pain of sudden onset that then spread to involve the whole abdomen. Her LMO was called (Dr T) and she was referred to hospital.*

PROBLEM NUMBER	TITLE OF PROBLEM	ONSET	STATUS
1	Acute abdomen: perforated ulcer	20.07.15	A
2	Rheumatoid arthritis	2012	A
3	Myocardial infarction	2014	IA

Patient profile: *Mrs S, a 69-year-old pensioner, lives alone in her own house in Dandenong. Her husband died 6 years ago. She has a supportive family of three grown children all living in Melbourne.*

Systems review: *Rheumatoid arthritis affecting the hands and feet for 8 years; moderate deformities of hands cause disability and pain requiring active treatment with analgesics and non-steroidal anti-inflammatory agents. No other relevant symptoms on systems review.*

Risk factors: *Anti-inflammatory agents for rheumatoid arthritis – no history of cigarette smoking.*

Past history: *(i) Myocardial infarct: last year. No complications or sequelae, no angina since, no current medications. (ii) Tonsillectomy when a child.*

Family and social history: *Parents both dead: mother stroke, father old age.*

Current medications: *'Brufen'400 mg tds, aspirin i-ii qid prn.*

Presenting complaint: # 1 Acute abdomen. *Sudden onset of very severe periumbilical pain 6 hours before admission on 20.07.2015. Pain remained severe and spread to involve whole abdomen over next three hours. She also noted pain in the left shoulder. On admission to ward still in severe pain. On examination, generalised, marked abdominal tenderness and board-like guarding and rigidity. Silent abdomen with absent bowel sounds. Rectal examination normal.*

Not shocked, BP 120/70, P90, regular, T 37.1 C.

Cardiovascular assessment: Heart not enlarged, no signs of heart failure, heart sounds normal, no murmurs.

Systems review: No other abnormal findings except for arthritis.

An erect plain x-ray of the chest and abdomen showed free gas under both sides of diaphragm. Assessment: ***Acute abdomen*** *– generalised peritonitis. Free gas under the*