Emergency Cross-cover of Surgical Specialties

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A Survival Guide

Edited by

Robert Miller

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FOREWORD

PROFESSOR SIMON MYERS

In austere times, staff efficiencies in the NHS are often criticised. In a more positive approach, Robert Miller has been realistic and pragmatic about cross-cover arrangements, and very helpfully, alongside others with experience at SHO grade, provided support for those managing patients outside their primary specialty interest. The content is inevitably selective, and could never be exhaustive. It comes across, however, as well conceived, and illustrated. It will fill the gaps whilst SHOs find their feet in a post, and is likely to be embraced by other team members e.g. clinical nurse specialists. It will encourage informed discussion with senior grades. The authors should be congratulated for sharing their experiences in the interests of others challenged in the same way, and in the interests of patient care. It should become a staple for relevant departmental induction programmes.

Professor Simon Myers PhD FRCS [Plast]

GAPS Professor of Academic Plastic Surgery [Queen Mary University] & Honorary Consultant Plastic, Burn, Reconstructive & Aesthetic Surgeon [Barts & The London NHS Healthcare Trust]

PREFACE

This book has been designed to support the performance of junior doctors working at senior house officer level across surgical subspecialties. The hope is that it will improve both the standard of care given to patients and the efficiency and experience of doctors providing such care during on-call duties.

ACKNOWLEDGEMENTS

Illustrations:

The illustrations seen throughout this book have been designed and produced by **Ginny Caddick**. Ginny is a London-based General Surgery trainee working as a Registrar in the South East London Deanery. With clinical experience in General and Plastic Surgery, she hopes to pursue a career in Oncoplastic Breast Surgery. However, in her spare time, she has developed a keen interest in an assortment of artistic modalities. These include etching, screen-printing and, as you can see, illustrating. She has been involved in a number of educational illustration projects, within biological science and medical fields. It has been a privilege to work with her in the production of the fantastic illustrations seen throughout this book.

Instagram: @thechirographer

Front cover:

The front cover has been designed by the very talented **Hugo Beaumont**. Hugo is currently working as a senior house officer in Bristol, but has a keen interest in art and graphic design. He has been involved in a number of medically-orientated projects including work as the graphic designer for the U.K. Sepsis Trust during the formative stages of the charity.

INTRODUCTION

ROBERT MILLER

With the introduction of the European Working Time Directive and changes to doctors' contracts and rotas, junior doctors at senior house officer (SHO) level are increasingly expected to cross-cover surgical specialties whilst on-call. Often these are specialties in which they have limited, or no, post-graduate experience or training. Departmental inductions are often short, rushed or missed altogether, particularly for those who only work in the specialty when providing cross-cover whilst on-call. It is not uncommon for SHOs to find themselves covering a speciality on-call for the first time out-of-hours, when senior supervision is less readily available. This can lead to inefficient delivery of patient care and be stressful. Many questions or situations faced whilst on-call are not life or limb threatening, but if the individual has little experience within the speciality, they simply find themselves unequipped with the day-to-day working knowledge to adequately provide answers or solutions. Whilst the answers may be found within textbooks or online, this is often not feasible during a busy on-call period and can lead to stress, anxiety and delays in patient care.

This book is **written for junior doctors, by junior doctors**. It aims to provide a **concise and easy to read tool** for doctors covering surgical specialties whilst on-call and is written by authors who have extensive experience in each speciality at SHO level. It covers each surgical speciality in turn, addressing speciality specific emergencies; when to admit patients; when to call for senior help and guidance on common referrals or questions post-operative complications and common medical emergencies in surgical patients. In addition, it outlines some key practical skills often required in surgical specialties, providing tips and tricks for performing them safely and successfully. Lastly, with increasing availability of high-quality Apps and websites, it summarises key online resources available for junior doctors within surgical specialties.

This book is the ideal companion for any junior doctor, physicians' assistants, emergency nurse practitioners or advance nurse practitioners involved in delivering care to surgical patients. The aim is to allow doctors to deliver high-quality patient care with confidence. The book does not aim to replace already available, high quality, anatomy resources. Much of surgery relies on a sound knowledge of relevant anatomy and this should be revised. Although this book aims to cover all the common situations and scenarios faced when on-call, if you are in doubt it is always acceptable and appropriate to contact your senior to ask for help, confirm your management plan or escalate an unwell patient.

What to establish prior to starting any on-call shift:

Before starting an on-call SHO shift in any surgical speciality, whether in or out-of-hours, there are some basic points you must familiarise yourself with in order to facilitate organised, efficient and safe delivery of care.

Below is a list of points that should be established prior to starting your shift. If you are working in an unfamiliar hospital or department, or as a locum doctor, it is completely reasonable for you to request these details prior to starting your shift.

- Your seniors:
    - Consultant on-call
    - Registrar on-call and contact details

- Referrals:
    - What external units do you accept referrals from
    - What cases do you accept/not accept

- Helpful contact numbers:
    - On-call medical team
    - Intensive care team and outreach team
    - Site/bed manager
    - On-call radiologist and on-call radiographer/mobile imaging

- Documentation and computer systems:
    - Computer log-in details
    - Where to document patient reviews on the ward and in A&E
    - Speciality specific computer system and log-in details

  - How to access the in-patient and clinic lists
  - Imaging system and log-in details

- Booking theatre cases:
  - Theatre case booking – online, hand-written or both?
  - On-call anaesthetist contact details
  - Theatre co-ordinator contact details

- Bloods:
  - How to request (hand written or printed)
  - How to send (porter or pod system)
  - Group and save process (online, hand written, printed and how many samples)

- Hot and cold clinics:
  - How to book into them
  - What to tell the patient
  - What cases can or should be booked and suitable timeframes

- Abscess pathways:
  - Almost all surgical specialties will have an abscess pathway for cases that require operative management but do not require admission.
  - How to book into them and what to tell the patient

- Local microbiology guidelines

The below points should be established when receiving a hand-over at the beginning of your shift to ensure the safe continuity of care.

- Patients awaiting review in A&E or awaiting senior review

- Unwell patients:
  - Patients to be aware of
  - Patients to review
  - Escalation plans for these patients from the day team if covering nights

- Post-operative patients:
  - Post-operative patients that require review overnight

  - Post-operative patients to be aware of
  - Post-operative bloods to review, chase, or request

- Pre-operative patients:
  - Elective or emergency cases that have been admitted for surgery
  - Overnight it is important to ensure these patients have been appropriately worked-up for theatre (bloods, ECG, X-ray etc…)
  - Remember to add them to the patient list

Preparing patients for theatre

As a surgical SHO it is vital that you are able to ensure patients that require surgery are appropriately worked up and ready for surgery so there are no delays.

Delays caused by poor preparation or planning are almost always preventable and cause much frustration to theatre teams and delay patients' care.

Compulsory items:

- Signed consent form for the procedure:
  - If you are not familiar with the procedure and the possible risks and complications, ask for senior help or inform your team that you have not been able to consent the patient
  - Including surgical site
  - Remember to include any additional procedures that may be performed such as placing nasogastric tube, catheters and drains
  - If the patient cannot consent, a consent Form 4 should be completed by a senior member of the team with family/next of kin involvement

- Mark the surgical site and confirm this with the patient (if possible)
- Book the patient for theatre/ensure they are on the operating list (theatre co-ordinator and anaesthetic team need to be aware but the exact process depends on your hospital).

- Ensure nil by mouth status clarified and both the patient and nursing staff are aware:
    - 6 hours pre-operatively for food and most drinks
    - 2 hours pre-operatively for clear fluids (water, black coffee, black tea, non-fizzy diluted juice)
    - Although this is the traditional guidance and is often adopted, there is evidence to suggest that these criteria are too strict and hence there is inter-hospital variation

Procedure dependent items:

- Blood group and screen. Ensure the correct number of bottles have been sent/ labelled correctly. Check with the blood bank for high risk patients
- Cross match units of blood if applicable
- Coagulation studies
- FBC & U&Es
- ECG (patients >50 years, or if clinically indicated)
- CXR (patients >50 years, or if clinically indicated, undergoing GA or abdominal surgery)
- Foley catheter to monitor fluid status (if applicable)
- Anaesthetic consultation/review pre-op
- Reserved monitored bed post-operatively (if applicable)
    - Patient undergoing complex free flap reconstruction and head and neck cases need to be managed on wards competent in monitoring free flaps or complex airways
- Procedure specific imaging

Addressing the points raised throughout this section will ensure you are effective whilst working on-call. This will in turn facilitate the delivery of excellent patient care. However, despite all efforts, on-call working can be tough and stressful (we have all had a shift that haunts us!). Remember, always take a break and have something to eat /drink and if you are struggling, ask for support.

List of Abbreviations

AAA	Abdominal Aortic Aneurysm
AAST	American Association for the Surgeons of Trauma
ABPI	Ankle Brachial Pressure Index
ACS	Acute Coronary Syndrome
AF	Atrial Fibrillation
ALI	Acute Limb Ischaemia
AMTS	Abbreviated Mental Test Score
AP	Anterior-Posterior
ATLS	Advanced Trauma Life Support
AVPU	Alert, Voice, Pain, Unresponsive
BAUS	British Association of Urologists
BOAST	British Orthopaedic Association Standards for Trauma
BPH	Benign Prostatic Hyperplasia
CI	Intermittent Claudication
CLI	Critical Limb Ischaemia
CLI	Critical Limb Ischaemia
COPD	Chronic Obstructive Pulmonary Disease
CRP	C-reactive protein
CT	Computed Tomography
CXR	Chest X-Ray
DJ	Duodeno-jejunal
DKA	Diabetic Ketoacidosis
DPT	Dental Panoramic Tomography
DRE	Digital Rectal Examination
DRUJ	distal radio-ulnar joint
EAU	European association of Urology
ECG	Electrocardiogram
ED	Emergency Department
EMSB	Emergency Management of Severe Burns
ENT	Ear Nose and Throat
FBC	Full Blood Count
GA	General Anaesthetic
G&S	Group and Save
GCS	Glasgow Coma Scale
GP	General Practitioner
HAP	Hospital Acquired Pneumonia

HHS	Hyperosmolar Hyperglycaemic Syndrome
IV	Intra-venous
KUB	Kidney, Urethral, Bladder
LUTS	Lower Urinary Tract Symptoms
LA	Local Anaesthetic
MC&S	Microscopy, culture and sensitivities
MRI	Magnetic Resonance Imaging
MTC	Major Trauma Centre
MUA	Manipulation under anaesthetic
NBM	Nil by Mouth
NGT	Nasogastric tube
NICE	National Institute of Clinical Excellence
NSAID	Non-Steroidal Anti-Inflammatory Drug
OM	Occipitomental
OMFS	Oral and Maxillofacial Surgery
ORIF	Open reduction internal fixation
PA	Posterior to Anterior
PCI	Percutaneous Coronary Intervention
PCN	Percutaneous nephrostomy
PSA	Prostate Specific Antigen
SHO	Senior House Officer
SPC	Supra-pubic catheter
SSNHL	Sudden onset SensoriNeural Hearing Loss
STI	Sexually transmitted infection
T&O	Trauma and Orthopaedics
TBSA	Total Body Surface Area
TWOC	Trial Without Catheter
U&E	Urea and Electrolytes
USS	Ultrasound scan
UTI	Urinary Tract Infection
WBC	White Blood Cells

CHAPTER 1

BREAST SURGERY

VIRGINIA CADDICK & ABDUL KASEM

Abstract

Breast surgery is often encompassed within general surgery but can be a stand-alone surgical speciality and comes with specific considerations when on-call.

This chapter covers key breast pathologies and treatment principles encountered when providing cross-cover care. It will also cover general principles regarding understanding and managing elective breast patients on the ward.

Section 1: Introduction

As a surgical Foundation Year 2 doctor or core trainee on-call, you will encounter a variety of breast patients. This chapter endeavours to prepare you to deal with the most common presentations. These fall in to 2 main categories:

- New presentations (as GP or ED referrals)
- Post-operative complications:
    - In-patient ward reviews
    - Re-admissions:
        - Locally NHS treated patients
        - Private sector cosmetic patients

First, we will explore a standardised approach to history taking and examination when clerking or reviewing breast patients.

Section 2: History Taking in Breast Patients:

Presenting complaints:

- Is there a lump?
- Is there any breast pain? Cyclical/non-cyclical; unilateral/bilateral
- Are there any skin changes?
- Nipple discharge: Uniductal/multiductal/spontaneous. Colour: blood-stained, milky/clear, green/brown
- Nipple changes: inversion

To assess risk of breast cancer:

- Age of menarche
- Age of menopause
- Years of OCP/HRT
- Number of children (and number breast fed)
- Previous breast cancer:
    - Laterality, date of diagnosis
    - Histology
    - Surgery
    - Adjuvant treatment
- BMI
- Smoking
- Family history

Implants:

- Uni/bilateral
- Date of previous procedures, consultant
- Implant type:
    - Expander or implant
    - Size
    - Shape/brand
- Any previous implant problems:
    - History of wound problems
    - History of infection

Section 3: Breast Examination

All patients, especially in acute presentations or post-operative patients, should be examined within the context of an ABCDE framework. Breast examination would take place in 'Exposure'. It is important to review the observations, the medication chart, the pain chart and any operative/ward notes.

A: AIRWAY
B: BREATHING
C: CIRCULATION
D: DISABILITY
E: EXPOSURE

Patient Positioning: Ideally Patients should be examined both at 45 degrees, with arm above head, and sat on edge of bed with hands on hips. All patients should be examined without bra, and with chaperone.

Approach all 4 quadrants in a logical, systemised approach:

- Radial
- Spiral
- Quadrants
- Lumps:
    - Location in relation to quadrant/clock face
    - Size
    - Consistency - Is it fluctuant or firm?
    - Is it fixed or mobile? Is it tethered?
    - Is it tender?

Figure 1. *Diagram of documenting in clock-face and quadrants*
See colour centrefold for this image.

Are there overlying skin changes?

- Axilla:
    - Is there lymphadenopathy?
    - Is there a collection?
    - Is there an abscess?

- Nipple areolar complex:
    - Is it viable?
    - Are there any underlying collections?
- Post-operative patients with wounds/dressings:
    - Are the dressings dry/intact?
    - Is there an area of swelling/exquisite tenderness above that expected post-operatively?
- Drains:
    - What volume in i) last hour; and ii) last 24 hours
    - Contents: serosanguinous, serous, frank blood
    - Surrounding skin: any evidence of infection/ moisture lesions? Is the drain bypassing?

How to document breast lumps can be seen in figure 1. Accurate documentation is vital.

Section 4: Common Presenting Complaints

Depending on your local trust referral pathway, the majority of these patients can be seen in Breast Clinic. We will cover the most common presenting complaints that may be referred during an on call. These fall into 2 main categories:

New presentations:

1. Breast Abscess
2. Axillary abscesses
3. Fungating breast lesions
4. Breast trauma/haematomas

Post-operative complications:

1. Haematoma
2. Seroma/infected seroma
3. Implant problems

Breast abscess:

A suspected breast abscess is a common acute presentation to the General Surgery on call take. If there are clinical concerns regarding the following, they should be seen on the acute take rather than direct urgent breast clinic referral:

- Evidence of sepsis/systemic infection
- Evidence of skin necrosis warranting I&D on CEPOD
- Immunocompromise: e.g. diabetes

It most commonly affects women between the ages from 18-50. Aetiology can be divided into 2 groups: lactational and non-lactational abscesses. It is important to differentiate between mastitis and an abscess; the management for each is different.

In the History, ask about:

- Duration of symptoms
- Can they feel a lump? Has the size of this changed?
- Has it given out any pus?
- Have they had previous abscesses?

- Have they had previous skin infections (e.g. hidradenitis) or TB?
- Have they felt feverish/shivery?
- Are there any co-morbidities compromising immune system?
    - Diabetes Mellitus
    - Steroids
    - Immunosuppressants
    - BBV
- Do they smoke?
- Are they post-partum? If so, are they breastfeeding?
- Have they taken any antibiotics?
    - Which ones and duration of each course
    - Have they had any swabs taken? If so, where?

On Examination:

- Observations: Evidence of sepsis
    - Pyrexial
    - Tachycardia
    - SIRS response
- Breast:
    - Site of the lump (clock-face or quadrant)
    - Size
    - Fluctuance
    - Quality/involvement of overlying skin (necrosis/cellulitis)
    - Is there a discharging sinus/pus?

- Axilla: Is there palpable axillary lymphadenopathy?

Investigations:

- Bloods: inflammatory markers (WCC, neutrophil count, CRP)
- VBG if septic
- Cultures: blood, urine, pus swab
- Ultrasound +/- aspirate: is there a drainable collection? If so, specify need to send aspirate for microbiology!

Management:

Although like other abscesses, breast abscesses involve a walled-off collection of pus, often not adequately penetrated by oral antibiotics, the