GUIDELINES

For

GENERAL PRACTITIONERS

2024

Press record

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FOREWORD

It is a great honor for me to write a foreword to Guidelines for General Practitioners by General Practitioners' society, Myanmar Medical Association (Central).

General practitioners are the primary health providers in the community looking after the majority of the people of our country. They are being trusted and depend upon by every families in the surrounding area where they practice. The first and foremost care by the General Practitioners are the most important for all the people.

Guidelines based on a critical appraisal of scientific evidence (evidence-based guidelines) clarify which interventions are of proved benefit and document the quality of the supporting data. They alert clinicians to interventions unsupported by good science, reinforce the importance and methods of critical appraisal, and call attention to ineffective, dangerous, and wasteful practices.

Clinical guidelines can improve the quality of clinical decisions. They offer explicit recommendations for clinicians who are uncertain about how to proceed, overturn the beliefs of doctors accustomed to outdated practices, improve the consistency of care, and provide authoritative recommendations that reassure practitioners about the appropriateness of their treatment policies.

The Myanmar Medical Association together with the GP society has been helping out with the CME and CPD program for the Member doctors both inhouse sessions and online courses. This guideline is one of the essential parts of this CPD for the GPs.

I would like to congratulate the GP society for their effort for producing this guideline and also, I would like to encourage them to review and updated regularly.

Professor Aye Aung
President
Myanmar Medical Association

April, 2024

PREFACE

We are writing this letter to express our sincerest gratitude and appreciation for the successful completion of the **second edition** of the **General Practitioners' Guidelines**. This accomplishment is the result of an exceptional collaborative effort, and we would like to extend our thanks to all those involved.

The General Practitioners' Guidelines has been an invaluable resource since its inception with the launch of the first edition in November 2017. As per the initial plan, the guidelines were intended to be updated every three years to ensure the most up-to-date information reaches Myanmar General Practitioners, enhancing their knowledge in primary healthcare and family health.

However, the unforeseen outbreak of the Covid-19 pandemic disrupted our plans and posed numerous challenges for the team. In-person meetings became impossible due to safety concerns, making it necessary for us to find alternative means of communication and collaboration. Despite the adversity faced, the team members demonstrated remarkable resilience and adaptability by utilizing online platforms and technology to continue the update process.

We would like to extend our deepest gratitude to the dedicated team members who persevered and worked tirelessly during these trying times. Their commitment, professionalism, and unwavering dedication to the project enabled us to overcome the obstacles posed by the pandemic and successfully complete the second edition of the guideline.

Furthermore, we would like to express our sincere appreciation to the specialist societies that actively contributed to the development of the guidelines. Their expertise and invaluable insights have ensured that the content remains current, accurate, and relevant, enabling our General Practitioners to provide the highest quality of care to their patients.

We would also like to extend our heartfelt thanks to the esteemed President of the Myanmar Medical Association, for their continuous support and guidance throughout this endeavor. Their leadership and unwavering commitment to advancing medical knowledge in Myanmar have been instrumental in the success of this Guidelines.

Moreover, the decision to distribute the guideline as electronic copies reflects our commitment to ensuring easy access for all Myanmar General Practitioners. By making it available in this format, we aim to facilitate the dissemination of updated knowledge, thus empowering our healthcare professionals to deliver the best possible care to the community.

In conclusion, we would like to express our deepest gratitude to all those who contributed to the development and distribution of the General Practitioners' Guidelines Second Edition. The unwavering supports and collective efforts have made a significant impact on enhancing primary healthcare and family health care in Myanmar.

Once again, thank you for your outstanding dedication, resilience, and invaluable contributions. We look forward to our continued collaboration in advancing medical knowledge and improving healthcare outcomes for all.

Dr Khine Soe Win and Dr Win Zaw April, 2024
General Practitioners' Society (Central)
Myanmar Medical Association

EDITORIAL

It is my privilege to inform you that our updated and revised edition of "**Guidelines for General Practitioners**" will be published very soon and it is my great pleasure to be the editor-in-chief of this guideline book. There are various reasons for revising and updating the previous edition.

This is the fact that some important topics, for example, malaria and family violence are missing in the first edition and some clinical practice guidelines like Diabetes Management have been changed during the interim period. Of course, this opportunity arises due to the emergence of COVID-19 in the world. As all you know, Medicine is an ever-changing science; we need to consider updating our guidelines at least five- yearly. Hence the time is up now!

Education is achieved by assimilating information from many resources and readers of this book can enhance their learning experience in terms of reflecting in their daily Family/General Practice. We all take immerse pride in contributing good educational resource dedicated to Myanmar General Practitioners. The editors and authors anticipate that the readers will both enjoy and profit from their work in preparing this volume.

Happy studying and learning,

Dr Win Lwin Thein
Editor-in chief
Vice President (GP Society)
April, 2024

ACKNOWLEDGEMENT

We would like to thank all our talented and hard-working colleagues who have contributed to the ongoing development of the **Guidelines for General Practitioners**.

Especially, we would like to highlight the significance of the second edition which appears when the family medicine development process in Myanmar is being idle. Many factors are impeding the developing process lately, which has been accelerated previously by the commitment of the MOHS, the medical universities, and the General Practitioners' Society before the COVID-19 pandemic started.

No one can deny that the Myanmar health care system is lacking a strong and effective primary care task force. The best solution to mend this defect is retraining the thousands of general practitioners who are working individually across the country. Here comes the role of family medicine to train these GPs and primary care doctors to be able to use its principles effectively and, in turn, strengthen primary care.

Many GPs are using some family medicine principles consciously or unconsciously in varying degree of competency. Person-centered care, continuity of care, and family-oriented care became the culture of most practices for a long time. But only a few GPs can enjoy the most effective coordinated care and seamless continuity of care with secondary and tertiary care providers. The reasons behind this would be the absence of standardization in general practitioners' service quality and unawareness of the value of family medicine practitioners by other specialties and the public.

To resolve this ambiguity, primary care doctors should be involved in the retraining programs and thereafter CME/CPD and other life-long-learning programs which prescribe family medicine curricula.

We also acknowledge the effort of the contributors to make this new edition more family medicine-oriented, in addition to the Family Medicine chapter at the beginning of the book. We genuinely believe that the new edition will be a better reference for the GP/FP who wants to practice quality primary care and for future family medicine programs in Myanmar.

Finally, we would like to thank all academic writers who contributed to the General Practice Guidelines-first edition. Without their kind support, this second edition could never have happened.

Regards,

Dr. Tin Aye and Dr. Kyaw Thu

General Practitioners' Society (Central), MMA **April, 2024**

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SYMBOLS AND ABBREVIATIONS

AAA abdominal aortic aneurysm
ABC airway, breathing, circulation
ABCD airway, breathing, circulation, dextrose
ABO A, B and O blood groups
ACE angiotensin-converting enzyme
ACEI angiotensin-converting enzyme inhibitor
ACTH adrenocorticotrophic hormone
ADHD attention deficit hyperactivity disorder
ADT adult diphtheria vaccine
AFP alpha-fetoprotein
AI aortic incompetence
AIDS acquired immunodeficiency syndrome
AIIRA angiotensin II (2) reuptake antagonist
AKF acute kidney failure
ALE average life expectancy
ALL acute lymphocytic leukaemia
ALP alkaline phosphatase
ALT alanine aminotransferase
AMI acute myocardial infarction
AML acute myeloid leukaemia
ANA antinuclear antibody
ANF antinuclear factor
AP anterior–posterior
APH ante-partum haemorrhage
ASD atrial septal defect
ASIS anterior superior iliac spine
ASOT antistreptolysin O titre
AST aspartate aminotransferase
AV atrioventricular
AZT azidothymidine
BCC basal cell carcinoma
BCG bacille Calmette-Guérin
BMD bone mass density
BMI body mass index
BP blood pressure
BPH benign prostatic hyperplasia
Ca carcinoma
CABG coronary artery bypass grafting
CAD coronary artery disease
CAP community acquired pneumonia
CBT cognitive behaviour therapy
CCF congestive cardiac failure
CCU coronary care unit
CD4 T helper cell
CD8 T suppressor cell
CDT combined diphtheria/tetanus vaccine
CEA carcinoembryonic antigen
CFS chronic fatigue syndrome
CHD coronary heart disease
CHF chronic heart failure
CIN cervical intraepithelial neoplasia
CK creatinine kinase
CKD chronic kidney disease
CKF chronic kidney failure
CML chronic myeloid leukaemia
CMV cytomegalovirus
CNS central nervous system
COAD chronic obstructive airways disease
COC combined oral contraceptive
COCP combined oral contraceptive pill
COPD chronic obstructive pulmonary disease
COX cyclooxygenase
CPA cardiopulmonary arrest
CPAP continuous positive airways pressure
CPK creatine phosphokinase
CPR cardiopulmonary resuscitation
CR controlled release
CREST calcinosis cutis; Raynaud's phenomenon; oesophageal involvement; sclerodactyly; telangiectasia
CRF chronic renal failure
CR(K)F chronic renal (kidney) failure
CRP C-reactive protein
CSF cerebrospinal fluid
CT computerised tomography
CTS carpal tunnel syndrome
CVA cerebrovascular accident
CVS cardiovascular system
CXR chest X-ray
DBP diastolic blood pressure
DC direct current
DHA docosahexaenoic acid
DI diabetes insipidus
DIC disseminated intravascular coagulation
dL decilitre
DMARDs disease modifying antirheumatic drugs
DNA deoxyribose-nucleic acid
DRABC defibrillation, resuscitation, airway, breathing, circulation
drug dosage bd—twice daily, tid/tds -three times daily, qid/qds -four times daily
ds double strand
DS double strength
DSM diagnostic and statistical manual (of mental disorders)
DU duodenal ulcer
DUB dysfunctional uterine bleeding
DVT deep venous thrombosis
EBM Epstein-Barr mononucleosis (glandular fever)
EBV Epstein-Barr virus
ECG electrocardiogram
ECT electroconvulsive therapy
EDD expected due date
EEG electroencephalogram
ELISA enzyme linked immunosorbent assay
ESRF end-stage renal failure
ESR(K)F end stage renal (kidney) failure
ERCP endoscopic retrograde cholangiopancreatography
esp. especially
ESR erythrocyte sedimentation rate
FB foreign body
FBE full blood count

FEV1 forced expiratory volume in 1 second
fL femtolitre = (1e–15) litre
FSH follicle stimulating hormone
FUO fever of undetermined origin
FVC forced vital capacity
g gram
GA general anaesthetic
GABHS group A beta-haemolytic streptococcus
GBS Guillain-Barré syndrome
GFR glomerular filtration rate
GI glycaemic index
GIT gastrointestinal tract
GLP glucagon-like peptide
GnRH gonadotrophin-releasing hormone
GO gastro-oesophageal
GORD gastro-oesophageal refl ux
GP general practitioner
G-6-PD glucose-6-phosphate
GU gastric ulcer
HAV hepatitis A virus
anti-HAV hepatitis A antibody
Hb haemoglobin
HbA haemoglobin A
anti-HBc hepatitis B core antibody
HBeAg hepatitis B e antigen
anti-HBs hepatitis B surface antibody
HBsAg hepatitis B surface antigen
HBV hepatitis B virus
HCG human chorionic gonadotropin
HCV hepatitis C virus
anti-HCV hepatitis C virus antibody
HDL high-density lipoprotein
HEV hepatitis E virus
HFM hand, foot and mouth
HFV hepatitis F virus
HGV hepatitis G virus
HIV human immunodeficiency virus
HNPCC hereditary nonpolyposis colorectal cancer
HPV human papilloma virus
HRT hormone replacement therapy
HSV herpes simplex viral infection
IBS irritable bowel syndrome
ICE ice, compression, elevation
ICS inhaled corticosteroid
ICS intercondylar separation
ICT immunochromatographic test
IDDM insulin dependent diabetes mellitus
IDU injecting drug user
IgE immunoglobulin E
IgG immunoglobulin G
IgM immunoglobulin M
IHD ischaemic heart disease
IM, IMI intramuscular injection
inc. including
IPPV intermittent positive pressure variation
IR internal rotation
ITP idiopathic (or immune) thrombocytopenia purpura
IUCD intrauterine contraceptive device
IUGR intrauterine growth retardation
IV intravenous
IVI intravenous injection
IVP intravenous pyelogram
IVU intravenous urogram
JCA juvenile chronic arthritis
JVP jugular venous pulse
KA keratoacanthoma
kg kilogram
KOH potassium hydroxide
LA local anaesthetic
LABA long acting beta agonist
LBBB left branch bundle block
LBO large bowel obstruction
LBP low back pain
LDH/LH lactic dehydrogenase
LDL low-density lipoprotein
LFTs liver function tests
LH luteinising hormone
LHRH luteinising hormone releasing hormone
LIF left iliac fossa
LMN lower motor neurone
LNG levonorgestrel
LRTI lower respiratory tract infection
LSD lysergic acid
LUQ left upper quadrant
LUTS lower urinary tract symptoms
LV left ventricular
LVH left ventricular hypertrophy
mane in morning
MAOI monoamine oxidase inhibitor
mcg microgram (also µg)
MCV mean corpuscular volume
MDI metered dose inhaler
MDR multi-drug resistant TB
MI myocardial infarction
MRCP magnetic resonance cholangiography
MRI magnetic resonance imaging
MS multiple sclerosis
MSM men who have sex with men
MSU midstream urine
N normal
NAD no abnormality detected
NGU non-gonococcal urethritis
NHL non-Hodgkin's lymphoma
NIDDM non-insulin dependent diabetes mellitus
nocte at night
NSAIDs non-steroidal anti-inflammatory drugs
NSU non-specific urethritis
(o) taken orally
OA osteoarthritis
OCP oral contraceptive pill
OGTT oral glucose tolerance test
OSA obstructive sleep apnoea
OTC over the counter
PA posterior–anterior
PAN polyarteritis nodosa
Pap Papanicolaou
pc after meals
PCA percutaneous continuous analgesia
PCB post coital bleeding

PCL posterior cruciate ligament
PCOS polycystic ovarian syndrome
PCP pneumocystis carinii pneumonia
PCR polymerase chain reaction
PCV packed cell volume
PDA patent ductus arteriosus
PEF peak expiratory flow
PEFR peak expiratory flow rate
PET pre-eclamptic toxaemia
PFT pulmonary function test
PH past history
PID pelvic inflammatory disease
PLISSIT permission: limited information: specific suggestion: intensive therapy
PMS premenstrual syndrome
PMT premenstrual tension
POP plaster of Paris
POP progestogen-only pill
PPI proton-pump inhibitor
PPROM preterm premature rupture of membranes
PR per rectum
prn as and when needed
PROM premature rupture of membranes
PSA prostate specific antigen
PSIS posterior superior iliac spine
PSVT paroxysmal supraventricular tachycardia
PT prothrombin time
PTC percutaneous transhepatic cholangiography
PU peptic ulcer
PUO pyrexia of undetermined origin
pv per vagina
qds, qid four times daily
RA rheumatoid arthritis
RBBB right branch bundle block
RBC red blood cell
RCT randomised controlled trial
RF rheumatic fever
Rh rhesus
RIB rest in bed
RICE rest, ice, compression, elevation
RIF right iliac fossa
RPR rapid plasma reagin
RR relative risk
RSV respiratory syncytial virus
RT reverse transcriptase
rtPA recombinant tissue plasminogen activator
SAH subarachnoid haemorrhage
SARS severe acute respiratory distress syndrome
SBE subacute bacterial endocarditis
SBO small bowel obstruction
SBP systolic blood pressure
SC/SCI subcutaneous/subcutaneous injection
SCC squamous cell carcinoma
SCG sodium cromoglycate
SIADH syndrome of secretion of inappropriate antidiuretic hormone
SIDS sudden infant death syndrome
SIJ sacroiliac joint
SL sublingual
SLE systemic lupus erythematosus
SLR straight leg raising
SND sensorineural deafness
SNHL sensorineural hearing loss
SNRI serotonin noradrenaline reuptake inhibitor
SOB shortness of breath
sp species
SR sustained release
SSRI selective serotonin reuptake inhibitor
SSS sick sinus syndrome
stat at once
STI sexually transmitted infection
SVC superior vena cava
SVT supraventricular tachycardia
T3 tri-iodothyronine
T4 thyroxine
TB tuberculosis
tds, tid three times daily
TENS transcutaneous electrical nerve stimulation
TFTs thyroid function tests
TG triglyceride
TIA transient ischaemic attack
TIBC total iron binding capacity
TM tympanic membrane
TMJ temporomandibular joint
TNF tissue necrosis factor
TOF tracheo-oesophageal fistula
TORCH toxoplasmosis, rubella, cytomegalovirus, herpes virus
TPHA Treponema pallidum haemoglutination test
TSE testicular self-examination
TSH thyroid-stimulating hormone
TT thrombin time
TV tidal volume
U units
UC ulcerative colitis
U & E urea and electrolytes
µg microgram
UMN upper motor neurone
URTI upper respiratory tract infection
US ultrasound
UTI urinary tract infection
U ultraviolet
VC vital capacity
VDRL Venereal Disease Reference Laboratory
VF ventricular fibrillation
VMA vanillyl mandelic acid
VSD ventricular septal defect
VT ventricular tachycardia
VUR vesico-ureteric reflux
VWD von Willebrand's disease
WBC white blood cells
WCC white cell count
WHO World Health Organization
WPW Wolff-Parkinson-White
XL sex linked

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CHAPTER (18) SURGICAL PROBLEMS

- Acute Abdomen
- Upper GI Bleeding
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- Dyspepsia
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- Abdominal Wall Hernia
- Breast Problems
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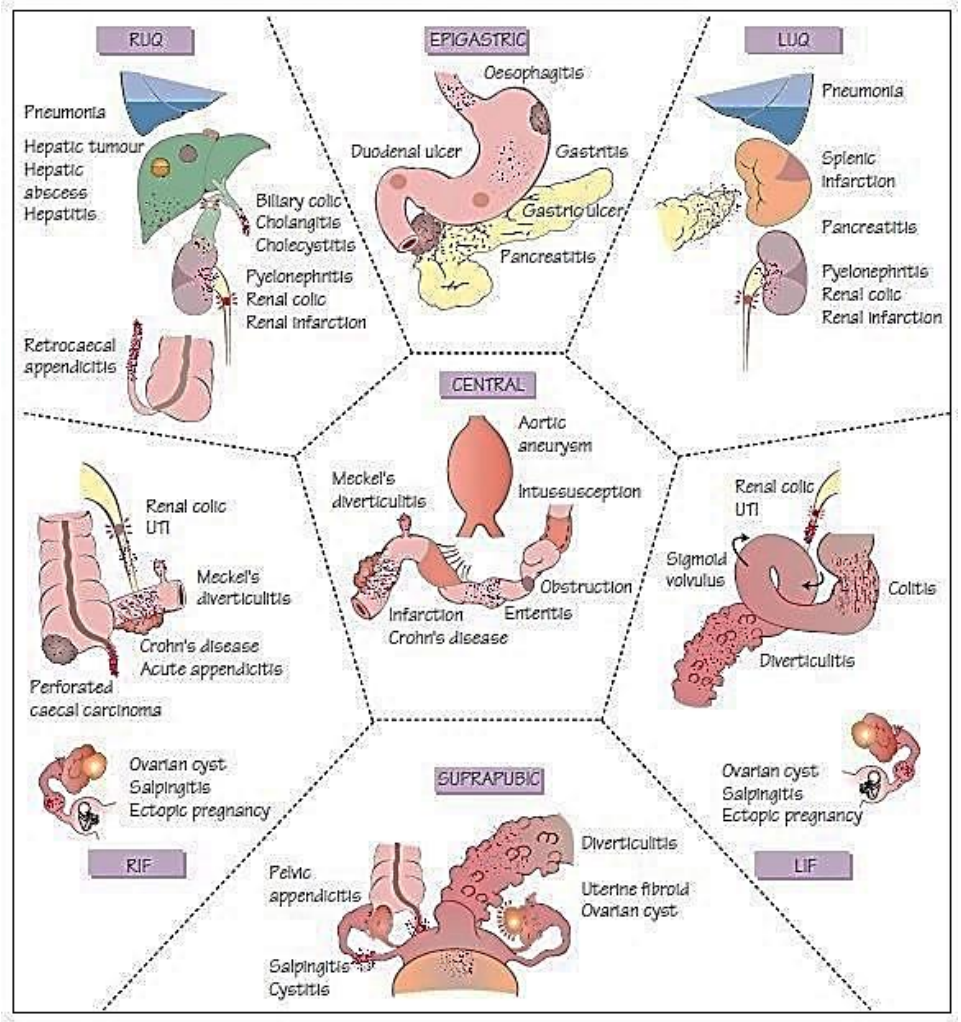
- Principle and procedures of minor surgery in general practice

•

ACUTE ABDOMEN

- Patients presenting with undiagnosed acute (severe) abdominal pain of less than one week (usually less than 48 hours) duration – may or may not be required surgical treatment
- Might be trivial to life threatening
- Therefore, to get diagnosis is crucial and sometimes to get diagnosis is tricky. So wide range of causes are worked out by basic clinical acumen such as history taking proper abdominal examination and some blood tests and imaging. Closed monitoring and observation by reassessment is also vital because sign and symptoms are changing with time and management is depending on causes.

Causes according to site (Quadrant of abdomen)



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To get diagnosis

- Thorough history taking about pain → site, onset, character, radiation, timing, aggravating and relieving factors, severity and associated factors, menstrual history in women with reproductive age
- Symptoms of other medical diseases (e.g., DM, chronic renal failure, history of herpes infection recently)
- History of trauma/injury recently
- Examination – general features of shock, fever, anaemia and jaundice are hints for diagnostic clues

Abdominal Examination

- Inspection, Palpation, Percussion and Auscultation
- Per Rectum and Vaginal examination (if necessary)
- Signs of peritonism and intestinal obstruction – must be looked for
- Don't miss to see inguinal regions for hernia

Investigations

Laboratory tests

- Full Blood Count, Urinalysis, UCG as baseline
- Specific lab tests if any suspicious pathology, e.g., serum amylase in case of suspicious for acute pancreatitis.

Imaging

- Plain X ray abdomen/chest (erect and supine - to detect gut perforation, intestinal obstruction, pneumonia or obliteration of pleurophrenic angle)
- USG (abdomen and pelvis) – any fluid collection, organ enlargement and other genitourinary and gynaecological pathology
- CT scan – e.g., acute pancreatitis, abdominal aorta aneurysm rupture

Management

- **Treat the cause.**
- **If unsure, admit as a surgical emergency to hospital.**
- **If possible, give analgesia prior to transfer to hospital.**
- **It is safe to start with liquid diet, and then semisolid to solid if improved**
- IV access, fluid replacement if necessary
- Conservative management/- watchful waiting if patient is stable without signs of peritonism or shock
- Laparoscopy or laparotomy if diagnosis remains unclear and not responding to conservative treatment

Timing for referral

- If the patient with shock or features of peritonism → prompt referral with IV access and resuscitation
- If the diagnosis is doubtful and not response to conventional treatment → refer to hospital to work up and observation under closed assessment

UPPER GI BLEEDING

Definition

- *Haematemesis* and *Melaena* due to blood loss from the upper GI tract, usually from proximal to the duodeno-jejunal junction

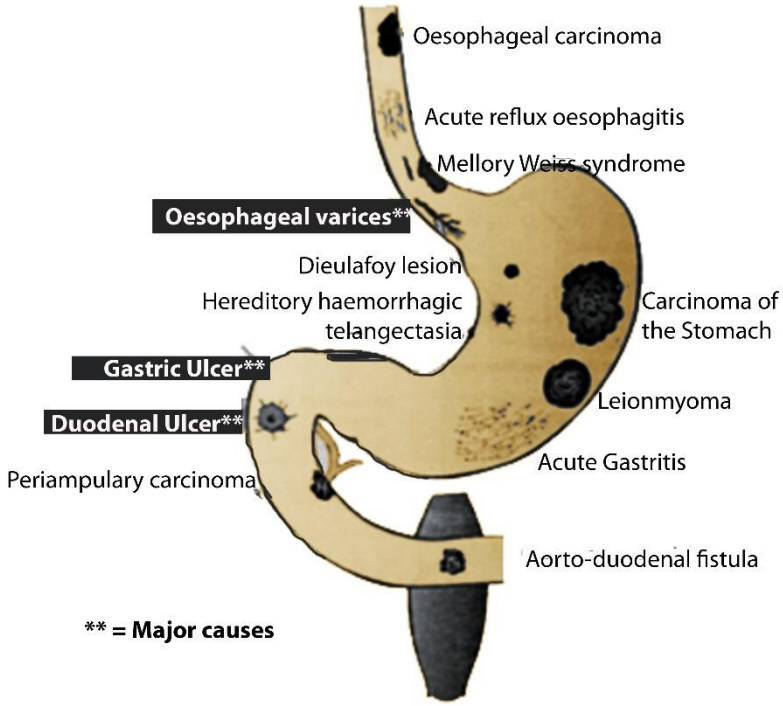
Haematemesis

- **Vomiting of coffee ground colour altered blood**, (need to differentiate from haemoptysis – containing froth, fresh blood and no nausea, occurred with coughing)

Melaena

- Passing of black tarry stool per rectum (need to differentiate from haematochesia – passing of fresh blood per rectum)

Causes



- In young adults, PUD, congenital lesions and varices are common causes.
- In the elderly, tumors, PUD and angiodysplasia are common causes.
- Most tumors more commonly cause anaemia than frank haematemesis.

to get diagnosis
History taking

- **History** of regurgitation, dysphagia, alcoholic/non-alcoholic liver diseases & features of liver insufficiency and history of forceful vomiting (Mallory- Weiss syndrome); History of PUD (peptic ulcer disease), dyspeptic symptoms, anaemic symptom, history of Duodenal Ulcer
- History of taking anticoagulant and antiplatelets and analgesics

Physical Examination

- **General – assess vital signs (Blood Pressure, Pulse Rate, Respiratory Rate, Temperature), Conscious level, pallor, Jaundice,**
- **Features of chronic liver insufficiency**
- **Abdominal exam – features of portal hypertension, any mass**

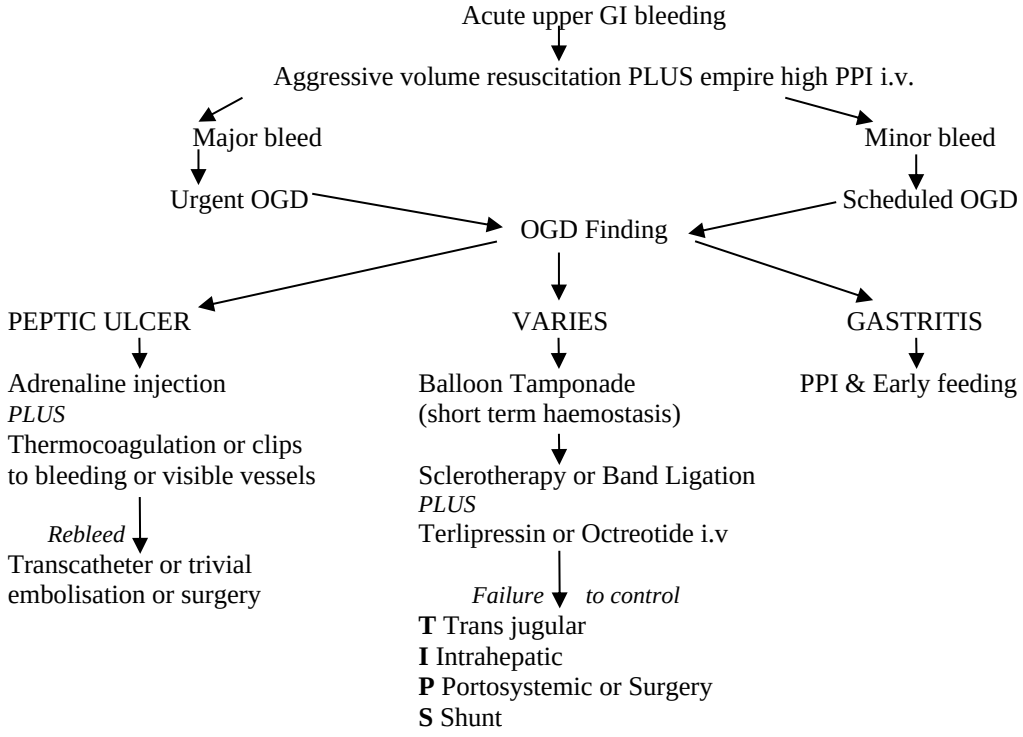
Investigations

- Laboratory: FBC, LFT (suspicious of varices), coagulation profiles
- Ultrasound: can diagnose liver cirrhosis, ascites, mass or tumour
- Endoscopy: **Investigation of choice** for diagnosis (site of lesion, severity accurately, biopsy), Test for *H. pylori* infection and therapeutics (varices – injection, banding; ulcer – injection/cautery)
- Angiography or CT angiography
- Barium meal and follow through: only for diagnosis, not therapeutic use

Management

- Refer for surgery (urgent endoscopy) if suspected.
- Rapid access of intravenous fluid and Proton-pump inhibitor (PPI) is the first priority.

Essential management of upper GI bleeding



Prevention

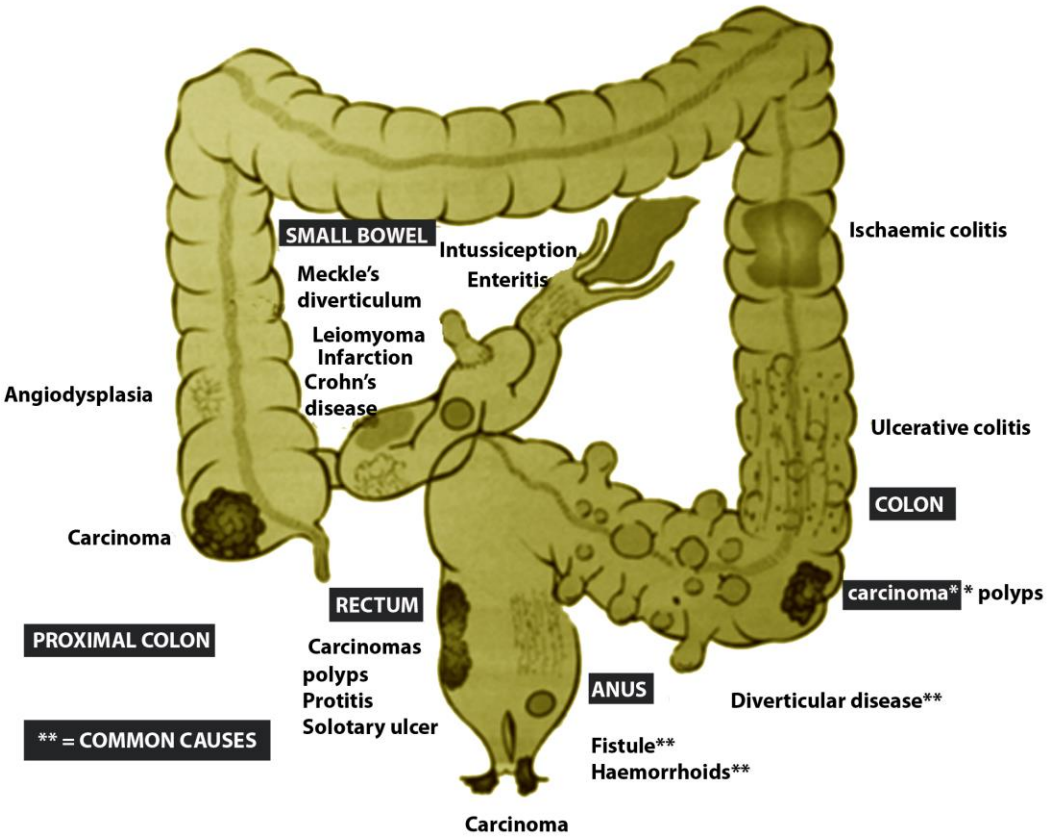
- H pylori eradication,
- Portal pressure reduction –banding through OGDS and Beta blocker
- Abstinence of alcohol drinking

LOWER GI BLEEDING

Definition

- Bleeding per rectum
- ***Anorectal bleeding*** *is characteristically bright red, associated with defecation.*
- ***Left sided/sigmoid bleeding*** *is characteristically dark red, with clots, may be mixed with stool.*
- ***Proximal colonic/ileal bleeding*** *is usually dark red, fully mixed with the stool or occult.*

Causes



Diagnosis

Depends on age

- **in children:** usually with anal fissure, Meckel's diverticulum and intussusception
- **in young adults:** anal causes (haemorrhoids, fissure, proctitis), colitis polyps are common causes
- **in the elderly:** colorectal tumors, diverticular disease, angiodysplasia and colonic ischaemia should be considered.

PER RECTAL EXAMINATION AND PROCTOSCOPY ± FLEXIBLE SIGMOIDOSCOPY

Investigations

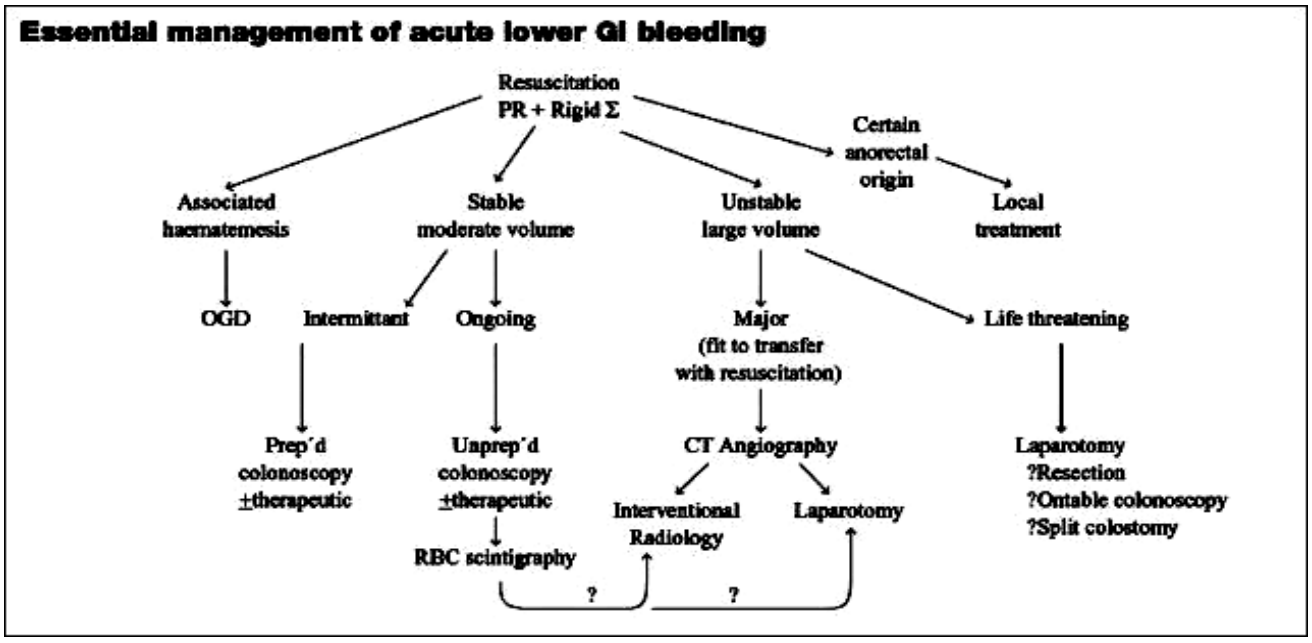
- FBC, coagulation profile, FOB testing
- Abdominal X ray and ultrasound – intussusception

- Flexible sigmoidoscopy: suspicious colitis, sigmoid tumor or diverticular disease
- Colonoscopy: diverticular disease, colonic tumors and angiodysplasia.
- Angiography: angiodysplasia, small bowel causes (especially Meckel's diverticulum- needs active bleeding 0.5ml/min, highly accurate when positive, invasive, allows embolization therapy)
- Technetium-99m-pertechnate labeled RBC scan: angiodysplasia, small bowel causes including Meckel's diverticulum, obscure colonic causes (needs active bleeding 1ml/min, less accurate placement of source, non- invasive, non-therapeutic.)
- Small bowel enema: small bowel tumor

Management

- Refer urgently to surgery if suspicious lower gastrointestinal tract symptoms and signs are present.
- Any age with:
- Right lower abdominal mass consistent with involvement of large bowel
- A palpable rectal mass (intraluminal, not pelvic; a pelvic mass outside the bowel would warrant an urgent referral to a urologist)
- Unexplained iron deficiency anaemia (Hb ≤11g/dL for male; ≤10g/dL for a non-menstruating female)
- Aged ≥40 yr
- Reporting rectal bleeding with a change of bowel habit towards looser stools and/or increased stool frequency persisting ≥6wk.
- Aged ≥60 yr with:
- Rectal bleeding persisting for ≥6wk without a change in bowel habit and without anal symptoms
- Change in bowel habit to looser stools and/or more frequent stools persisting for ≥6wk without rectal bleeding
- ! In a patient with equivocal symptoms who is not unduly anxious, it is reasonable to 'treat, watch, and wait'.

FLOW CHART



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- **If bleeding piles detected – treat haemorrhoids (first medical treatment, refer surgeon later if needed)**
- **If tumours detected or suspected – surgical referral**

DYSPEPSIA

Definition:

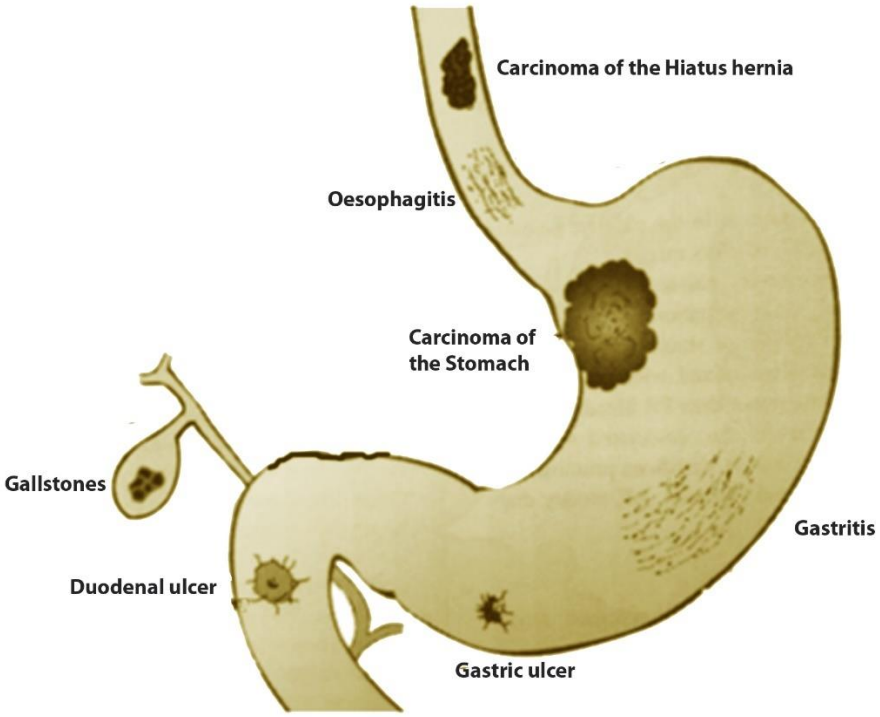
- The feeling of discomfort or pain in the upper abdomen or lower chest. Indigestion may be used by the patient to mean dyspepsia, regurgitation symptoms or flatulence.

New dyspepsia is <u>the only presenting symptom of upper GI malignancy</u>.

All older patients with **alarm symptoms** (dysphagia, vomiting, anorexia and weight loss, GI bleeding) should have endoscopy.

- In young adults, gastro-oesophageal reflux and *Helicobacter pylori*- positive gastritis are common causes.
- Dyspepsia in young people without alarm symptoms are very unlikely to be due to malignancy.
- Dyspepsia is rarely the only symptom of gallstones- they are often incidental findings

Causes of dyspepsia



Differential Diagnosis

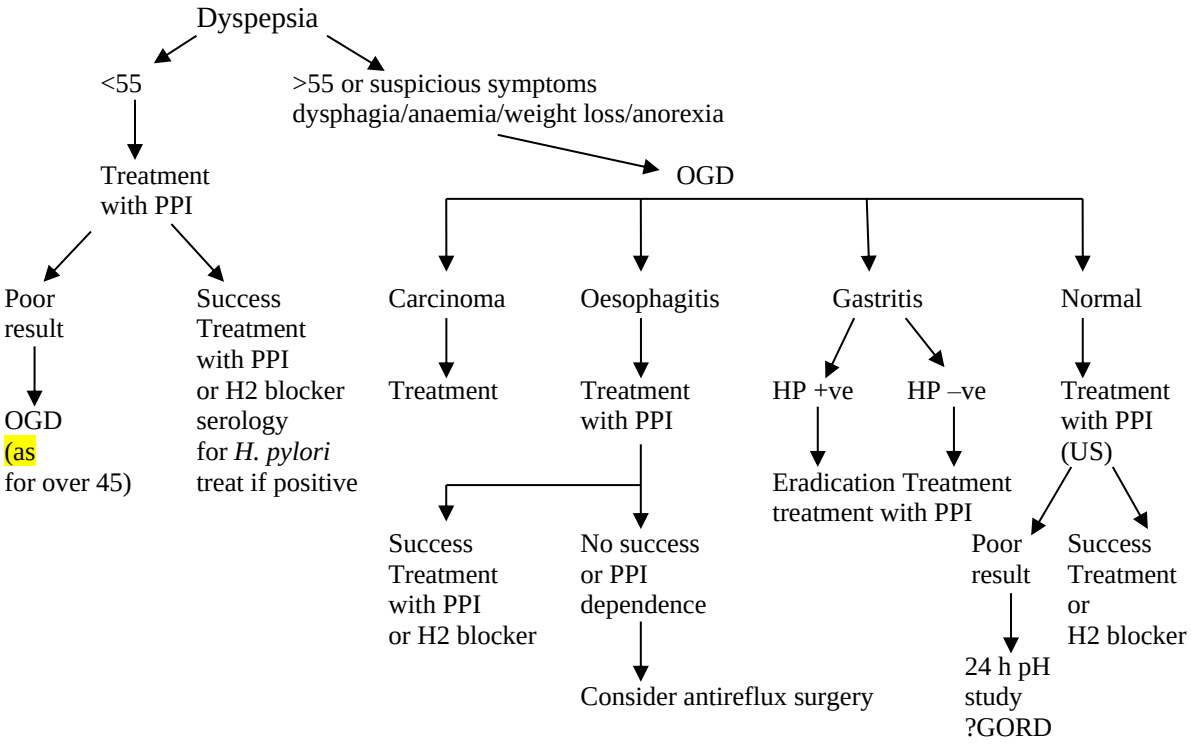
- Reflux oesophagitis
- Oesophageal carcinoma
- Gastritis
- Gastric ulcer
- Carcinoma of the stomach
- Hiatus hernia
- Duodenal Ulcer (*H. pylori* infection)
- Duodenitis (associated with alcohol and smoking)
- Gallstones – rare symptom

Investigations

- **FBC-** anaemia suggests malignancy
- Test for *H. pylori* – Urease breath test and endoscopic biopsy test
- OGDS –can detect tumors, PUD, oesophagitis etc.
- 24 hours pH monitoring- GORD
- Oesophagealmanometry – for dysmobility
- Ultrasound – to detect gallstones

Management

Treat the causes and when to refer are vital in dyspeptic patients



DYSPHAGIA

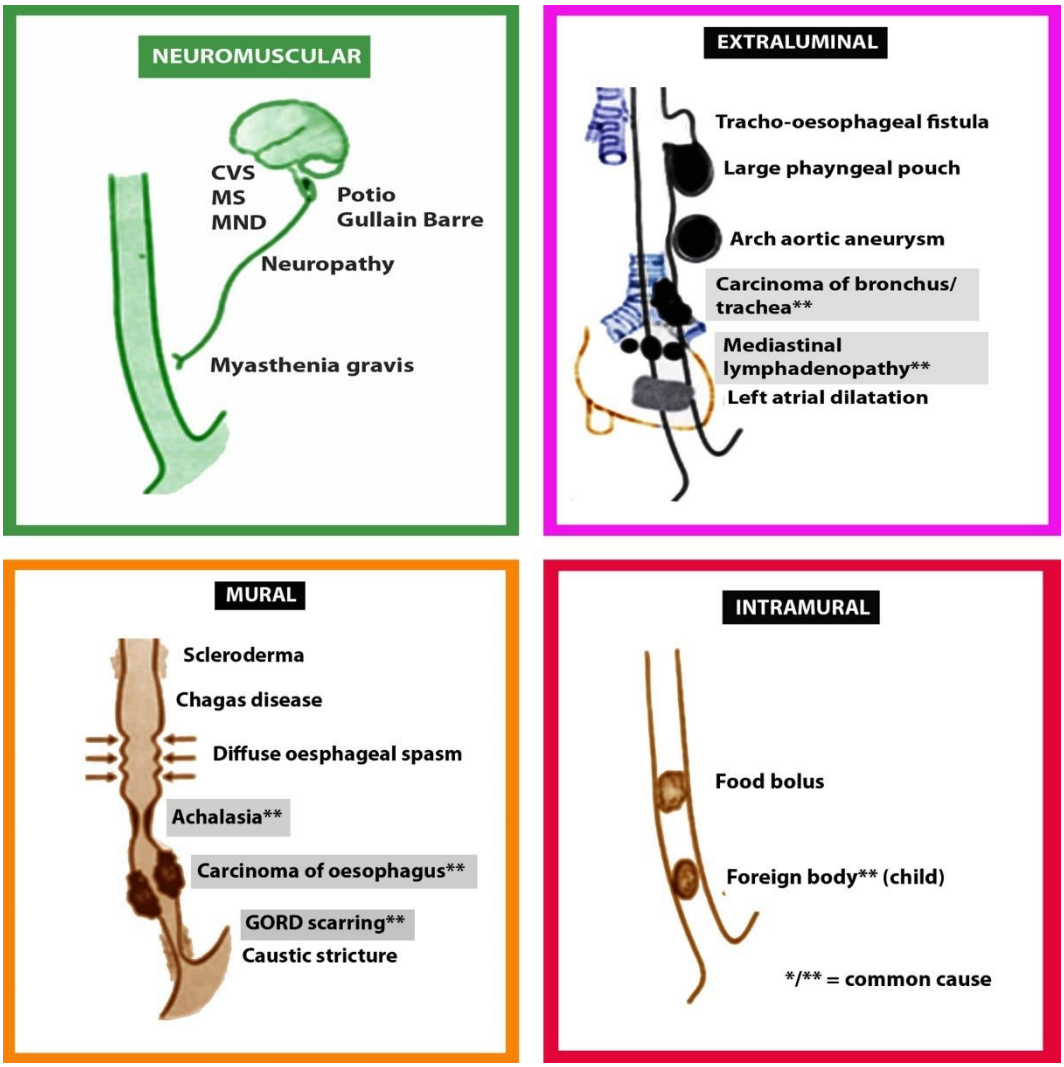
Definition

- Difficulty with swallowing, which may be associated with ingestion of solid or liquid or both

- Most causes of dysphagia are oesophageal in origin.
- **In children**, foreign bodies and corrosive liquid are common causes.
- **In young adults**, reflux stricture and achalasia are common.
- **In middle aged and elderly**, carcinoma and reflux are common.

- Because the segmental nerve supply of the oesophagus corresponds to the intercostal dermatomes, a patient with dysphagia can accurately pinpoint the level of obstruction.
- Any new symptoms of progressive dysphagia should be assumed to be malignant until proven otherwise. All need endoscopic ± radiological investigation. Tumor and achalasia may mimic each other. Endoscopy and biopsy are advisable unless the diagnosis is clear.

Causes



Investigations

All

FBC: Anaemia (tumours much more commonly cause this than reflux)

LFTs: (hepatic disease)

↓

OGD

(moderate risk, specialist, good for differentiating tumour vs. achalasia vs. reflux stricture, allows biopsy for tissue diagnosis, allows possible treatment)

Video contrast swallow

(low risk, easy, good for possible fistula, high tumour, diverticulum, reflux)

If ?dysmotility
achalasia
neurogenic causes

↓

Video contrast swallow
Oesophageal manometry

If ?extrinsic compression

↓

CXR (AP and lateral)
CT scan: low risk, good for extrinsic compression, allows tumour staging

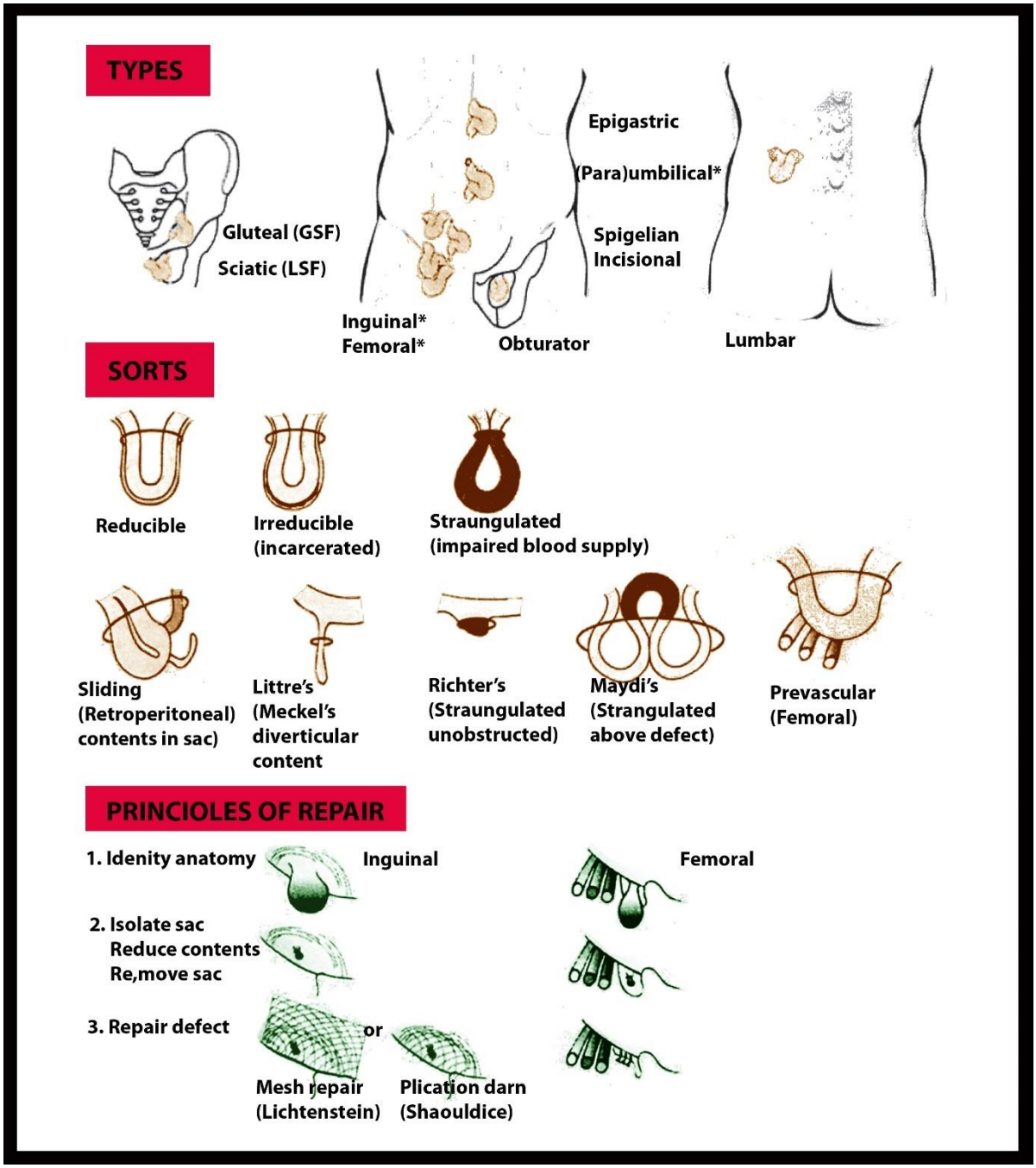
Management

- If there is any cause of dysphagia, referral to specialist thoracic surgeon to proceed confirmation of diagnosis and treatment.

ABDOMINAL WALL HERNIA

Definition

The protrusion of a viscus or part of viscus through an abnormal congenital or acquired opening in its covering



Complications of hernias

- **Irreducible hernia**: contents cannot be returned into the abdomen, thus risk of strangulation at any time
- **Obstructed hernia**: Irreducible hernia containing intestine which is obstructed from without or within but no interference to the blood supply to the bowel, usually go on to strangulation.

- **Strangulation hernia** (including Richter's hernia): blood supply of its content is seriously impaired, rendering the contents ischaemic and also has intestinal obstruction, gangrene can occur within 6 hrs.
- **Inflamed hernia**: Contents of sac have become inflamed (inflamed appendix, salpingitis)
- **Sliding hernia**: The sac contains loops of bowel and some bowel contents forming the wall of the sac
- **Incarceration**: the contents are fixed in the sac because of their size and adhesions
- **Maydl's hernia**: Hernia in W, when 2 adjacent loops of bowel are in the sac

Diagnosis of hernia

- Presence of swelling
- Cough impulse
- Reducibility

Diagnosis of complicated hernia

- Pain at swelling or abdomen, nausea, vomiting, ± the features of intestinal obstruction
- Increased size, tense, irreducible, loss of cough impulse, peritonitis and septicaemia

Management

- Assessment of the hernia for severity of symptoms, risk of complications (type and size of neck: e.g., femoral hernia)
- Assessment of the patient for fitness for surgery, impact of hernia on lifestyles (job, hobbies)
- Refer for Surgical assessment and surgical repair
    - Hernias in risk of complications
    - Hernias with previous symptoms
    - Hernias at low risk of complications but symptoms interfering with lifestyle

BREAST PROBLEMS

Introduction

- A woman presenting with breast problems is a common occurrence in general practice. Breast problems are ranging from mild pain to frank malignancy.

COMMON BREAST PROBLEMS

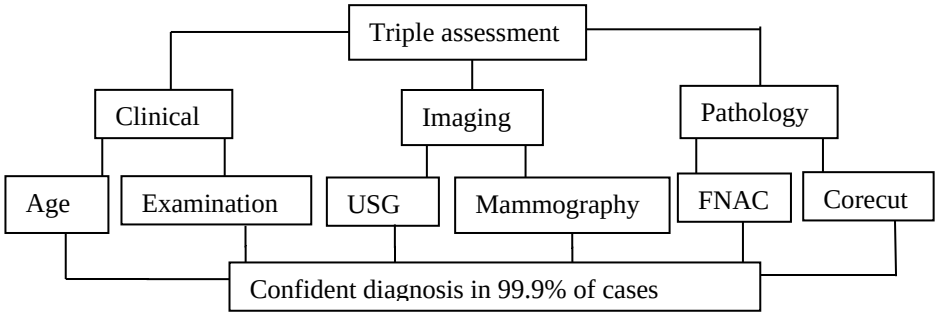
The most common breast symptoms presented to the GP are

(1) Breast lump with or without pain
(2) Breast pain alone
(3) Nipple discharge
(4) Swollen tender breast
(5) Change in the skin of the breast/nipple change
(6) Abnormal screening mammogram

How to get diagnosis

In a patient who presents with a breast lump or other symptoms suspicious of carcinoma, the diagnosis should be made by a combination of 'Triple Assessment'

(1) Clinical assessment
(2) Radiological assessment
(3) Cytological or histological assessment



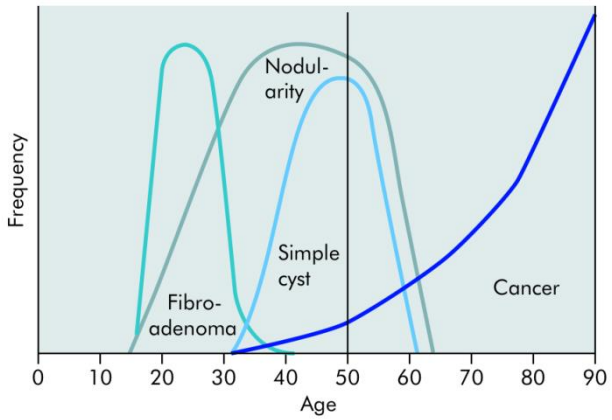
Clinical assessment

History:

- appropriate history focused on the complaint; important point is duration of the compliant
- Evaluation of risk factors such as age, family history, menstrual history, child bearing history, personal history of breast cancer, personal history of ductal hyperplasia

Physical Examination:

- breast, axillary and supraclavicular areas is mandatory
- General examination of the patient focused on the lungs, chest wall and abdomen also must be performed



Incidence of breast cancer and benign conditions against age

Radiological assessment

- Breast imaging is the starting point for assessment of breast problems
- Mammogram and ultrasound form the basis of most imaging
- MRI is used infrequently for diagnostic assessment of common clinical problems
- Generally, mammogram is not indicated for women age <30 because of low sensitivity and specificity

BIRADS (Breast Imaging and Reporting Data System)

- BIRADS 1: Normal — Annual follow-up
- BIRADS 2: Benign — Annual follow-up
- BRAIDS 3: Probably benign — Short interval (6 months) follow-up
- BRAIDS 4: Suspicious finding — Biopsy recommended
- BRAIDS 5: Highly suggestive of malignancy — Biopsy mandatory

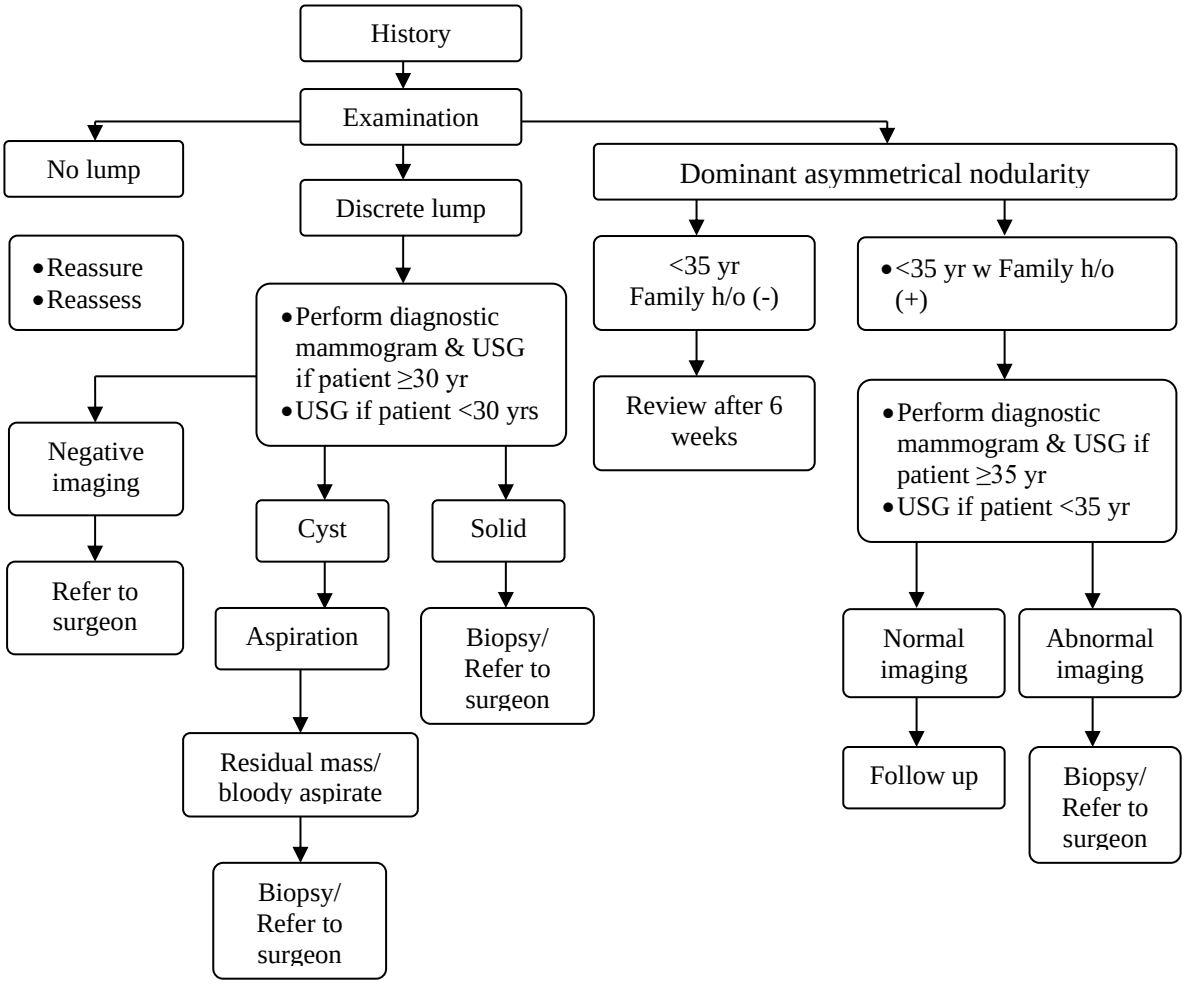
Cytological or histological assessment

Techniques:

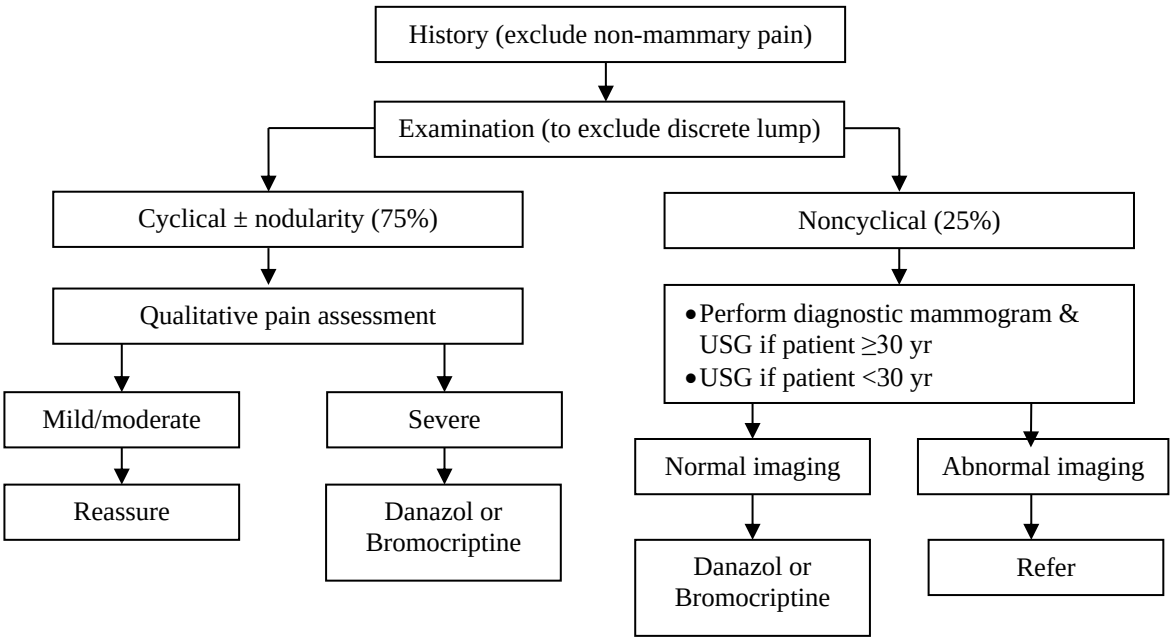
- Fine needle aspiration
- Core needle biopsy
- Image guided core biopsy
- Wire localized excisional biopsy
- Excisional biopsy
- Incisional biopsy (rarely used)

DIAGNOSTIC WORK UP FOR BREAST PROBLEMS

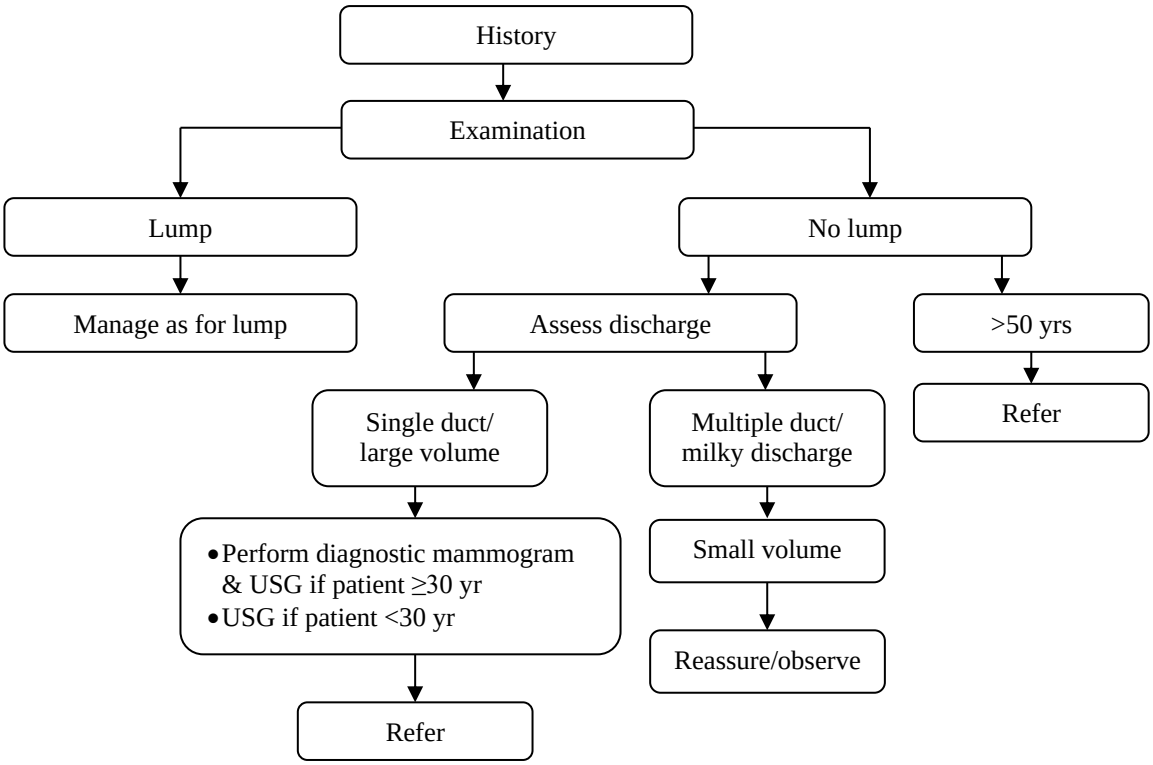
Evaluation of breast lump



Evaluation of breast pain



Evaluation of nipple discharge



Management

Treatment of benign breast disease

- Fibrocystic changes – Reassurance
- Fibroadenoma – Refer for excision or observation (depending on age, size and patient's wish)
- Duct papilloma – Refer for duct excision
- Breast cyst – Aspiration & cytology if fluid is blood-stained
- Breast abscess – Antibiotic, percutaneous drainage or open drainage

Treatment of breast pain

- Non-pharmacologic therapies
  - Mechanical support: wearing a well-supporting bra
  - Life style change: smoking cessation, stress reduction
  - Complementary & alternative medicine: Evening primrose oil
- Pharmacologic intervention
  - Analgesic
  - Danazol
  - Bromocriptine
  - Tamoxifen

Treatment of Ca. breast

Refer to hospital for a multidisciplinary treatment planning approach.

Treatment of early breast cancer

- **Locoregional treatment**

Surgery

- Breast-conserving therapy (Lumpectomy, breast radiation & surgical staging of the axilla)

- Modified radical mastectomy (Total mastectomy + axillary clearance)
- Total mastectomy + Sentinel lymph node biopsy

Adjuvant radiation therapy

- Postmastectomy in axillary node-positive tumor
- After breast-conserving surgery

Adjuvant systemic therapy

- Despite optimal local treatment, virtually all patients with invasive breast cancer have some risk of systemic relapse. Therefore, all women with invasive breast cancer stand to benefit from systemic treatment to try and reduce this risk.
-

Chemotherapy

Hormonal therapy

Treatment of advanced breast cancer

- Treatment for systemic disease is palliative in intent
- Goals of treatment include improving quality of life and prolongation of life
- Surgery may be indicated for selected patients (e.g., Mastectomy for fungating tumor)
- Radiation therapy is major role in palliation of localized symptomatic metastasis
- Systemic therapy

Referral criteria

URGENT REFERRAL

Those patients whose symptoms are highly suggestive of breast cancer

(i) Presence of a discrete lump in the appropriate age group
(ii) There are definite signs of cancer such as ulceration, skin nodules or skin distortion

CONDITIONS THAT REQUIRE REFERRAL TO A SURGEON WITH A SPECIAL INTEREST IN BREAST DISEASES

(i) Lump
- Any new discrete lump
- New lump in pre-existing nodularity
- Asymmetrical nodularity that persists at review after menstruation
- Abscess
- Cyst persistently refilling or recurrent cyst

(ii) Pain
- If associated with lump
- Intractable pain not responding to treatment
- Unilateral persistent pain in post-menopausal women

(iii) Nipple discharge
- All women aged 50 and over
- Women under 50 with bilateral discharge sufficient to stain clothes, blood-stained discharge, persistent single duct discharge

(iv) Nipple retraction or distortion, nipple eczema
(v) Change in skin contour

(vi) Family history
- Women with strong family history of breast cancer

Women who can be managed, at least initially, by their GP

(i) Young women with tender lumpy breasts and older women with symmetrical nodularity without localized abnormality
(ii) Women with minor and moderate degree of breast pain who do not have a discrete palpable lesion
(iii) Women aged under 50 who have nipple discharge which is intermittent, from more than one duct and is neither blood-stained nor troublesome
(iv) Asymptomatic women with minor family histories at low risk of developing breast cancer

Health promotion and disease prevention

Reducing /changing the risk factors

- Get regular, intentional physical activity
- Weight reduction
- Dietary advice

Early detection

- Health education
  - Breast self-examination
- Screening mammogram
  - Screening mammogram must be recommended every one to two years for women ages 50-75 years
  - Screening mammogram could be recommended to women ages 40-49 and over the age of 75

Genetic testing if having increased risk

- High risk
  - 2 first-degree relatives (mother, sisters, daughters) with breast cancer, one diagnosed when <50 years of age
  - 3 or more first or second-degree relatives (including grandmothers, aunts) with breast cancer
  - Both breast and ovarian cancer among 1st and 2nd degree relatives
  - A 1st degree relative diagnosed with cancer in both breasts
  - 2 or more 1st or 2nd degree relatives diagnosed with ovarian cancer
  - A male relative with breast cancer

Breast cancer chemoprevention

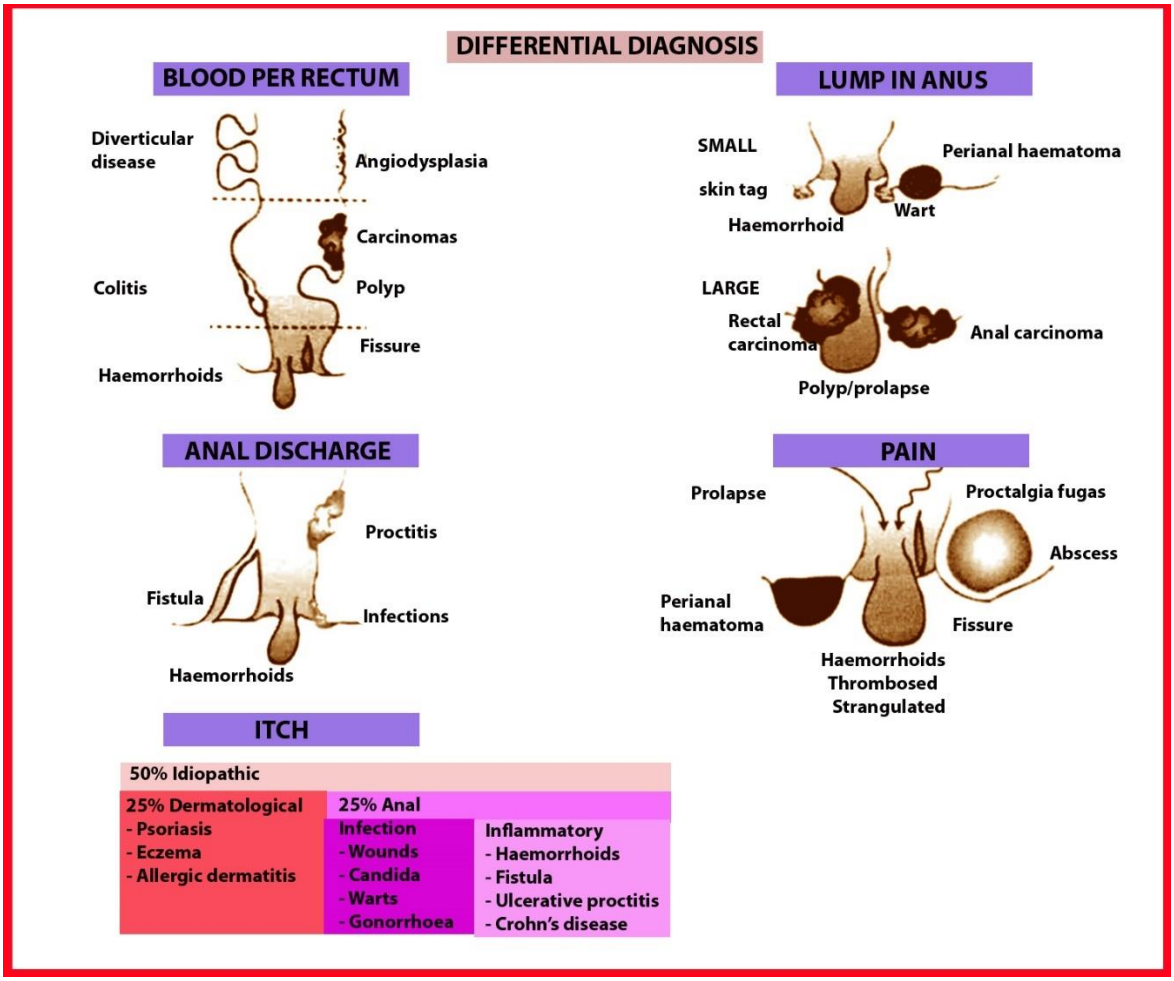
- Chemoprevention is the use of drugs to reduce the risk of cancer
  - Tamoxifen
  - Raloxifene
  - Aromatase inhibitors (Anastrozole, Letrozole)

Preventive surgery

- Prophylactic mastectomy
- Prophylactic oophorectomy

PERIANAL PROBLEMS

Differential Diagnoses



HAEMORRHOIDS (PILES)

A submucosal swelling in the anal canal consisting of a dilated venous plexus, a small artery and areolar tissue

- internal: only involves tissue of upper anal canal above dentate line
- external: involves tissue of lower anal canal below dentate line

Causes

- increased venous pressure from straining (low- fibre diet) or altered haemodynamics (e.g., during pregnancy) causes chronic dilation of submucous venous plexus.
- Found at 3' 7' 11' o'clock of anal canal

Classification

- First degree – bulge into lumen but do not prolapse
- Second degree – prolapse during defaecation with spontaneous reduction
- Third degree – prolapsed during defaecation and require manual reduction
- Fourth degree – irreducible and may strangulate

Clinical presentations

- Bright red bleeding per anus, pruritus, pain, prolapse and thrombosis

Treatment

- First degree – bulk laxative, high fluid and fibre diet
- Second degree (rubber band (Barron's) ligation, injection, sclerotherapy, cryotherapy

Refer to hospital

- Third degree –haemorrhoidectomy (closed/open/stapled)
- Fourth degree (i.e., inflamed prolapsed piles) – need hospital admission and prompt antibiotics to avoid septicaemia followed by surgery 48- 72 hours later
- Complications of treatment- bleeding, anal stenosis, pain

RECTAL PROLAPSE

Definition

The protrusion from the anus to a variable degree of rectal mucosa (partial) or rectal wall (full thickness)

Clinical presentations

- Faecal incontinence, constipation, mucous discharge, bleeding, tenesmus, obvious prolapse
- 10% of children with prolapse have cystic fibrosis

Treatment

- Manual reduction in young children
- Refer to Surgery – Delorme's perianal mucosal resection
    - Laparoscopic or open surgical rectopexy ± sigmoid resection

PERIANAL HAEMATOMA

Painful anal condition due to rupture of small blood vessel in the perianal area

Diagnosis – highly suspicion and evacuation of clot is necessary treatment

ANAL FISSURE

Longitudinal tear in the mucosa of anal canal, in the midline posterior (90%) or anterior (10%) due to passage of hard stool and potentiated by spasm of exposed internal anal sphincter

Other causes: pregnancy, delivery, Crohn's disease, sexually transmitted infections (lateral position), carcinoma of anus

Clinical features

Pain during defaecation with small amount of bright red blood on toilet paper, sphincter spasm, skin tag at distal end of tear (sentinel pile)

Treatment

- Stool softeners/bulking agent, local anaesthetic gel, 0.2/0.4 % nitroglycerine ointment
- Topical calcium channel blocker
- **Refer to hospital** for lateral internal sphincterectomy (95% cure, but risk of minor incontinence in 10 %)
- EUA and biopsy for atypical /suspicious abnormal fissure (e.g., Crohn's disease)

PERIANAL ABSCESS

Focus of infection starts in anal glands (cryptoglandular sepsis) and spreads into perianal tissues to cause

- perianal abscess
- ischioanal abscess
- para- rectal abscess

Early diagnosis of painful swollen mass with signs of sepsis and prompt incision and drainage of abscess with antibiotics

FISTULA – IN –ANO

- Abnormal communication between the perianal skin and anal canal
- Commonest cause is a consequence of inadequate drainage of perianal abscess,
- Association with Crohn's and TB

Types –

- Low: below 50% of external anal sphincter
- High: crossing 50%or more of the external anal sphincter

Clinical diagnosis –

chronic perianal discharge with granulation tissue perianally

Treatment

depending on the types (**referral to surgeon is mandatory**)

PILONIDAL SINUS

A blind-ending track containing hair in the skin of the natal cleft, may be due to trauma or congenital presenting as natal cleft abscess

Treatment:

Good personal hygiene and removal of hair, **refer to hospital** for incision and drainage of abscess, excision of sinus network with primary or delayed closure or tissue flap

PERIPHERAL VASCULAR DISEASES

Peripheral vascular diseases consist of arterial and venous disorders (acute and chronic).

PERIPHERAL ARTERIAL DISEASE (PAD)

- (Peripheral arterial occlusive disease, peripheral occlusive vascular disease) is a common disorder caused by acute or chronic interruption of blood supply to the limbs, usually due to atherosclerosis.
- All patients with PAD require screening for associated coronary or carotid disease.
- Most patients with PAD respond to conservative management.
- Surgery or interventional radiology is indicated for limb threatening (critical) ischaemia or disabling claudication.
- The presence of PAD is one of the best predictors of future death, stroke or MI.
- Male > female before 65 years.
- Increased risk with increased age.
- Affects 10 % of population >65 years in Western world.

Aetiology

- atherosclerosis and thrombosis
- embolism (80% cardiac in origin, microthrombi cause 'blue toe syndrome')
- vascular trauma
- vasculitis (e.g., Burger's disease)

Risk Factors

- Cigarette smoking, hypertension, hyperlipidaemia, diabetes mellitus, elevated homocysteine, family history

Pathology

- Reduction in blood flow to peripheral tissue results in ischaemia which may be acute or chronic. Critical ischaemia is present when tissue viability cannot be sustained (i.e., tissue loss, rest pain for two weeks, ankle pressure ≤50 mmHg).

Clinical features

Fontaine classification

- Stage I. Asymptomatic.
- Stage II. Intermittent claudication
- Stage III. Rest pain /night pain
- Stage IV. Necrosis/gangrene

Chronic ischaemia

- Intermittent claudication in calf (femoral disease), thigh (iliac disease) or buttock (aorto-iliac disease)
- Cold peripheries and prolonged capillary refill time.
- Rest pain, especially at night
- Venous guttering
- Absent pulses
- Arterial ulcers, especially over pressure points (heels, toes)
- Knee contractures
- Leriche's syndrome (intermittent claudication, impotence, absent femoral pulses) indicates aortic occlusion.

Acute ischaemia

- Pain

- Pallor
- Pulseless
- Paraesthesia and paralysis – indicate life threatening ischaemia that requires immediate treatment.
- Perishing cold
- Pistol shot onset
- Mottling Muscle rigidity

Investigations

Chronic ischaemia

- ABPI (normal >0.9) at rest and post-exercise on treadmill
- Digital pressure (normal toe pressure >50 mmHg)
- FBC (to exclude polycythaemia)
- Doppler waveform analysis
- Digital plethysmography (in diabetes)
- Duplex Ultrasound e.g., assessing a stenosis in the femoral artery.
- Angiography (MRA, CTA or catheter angiography)

Acute ischaemia

- ECG, cardiac enzymes
- Angiography, may be performed preoperatively.
- Ultrasound aorta for AAA

Management

Non- disabling claudication

- Stop smoking
- Exercise programme (exercise until claudication occurs, rest until pain subsides, repeat cycles for 45 – 60 minutes)
- Antiplatelet agents: aspirin or clopidogrel
- Statin: regardless of baseline cholesterol levels
- Cilostazol (pletal) 100 mg bd- improves claudication distance (contraindicated in patient with CCF)
- Pentoxyfylline (trental) improves blood flow by increasing RBC deformability and blood viscosity

Disabling claudication/critical ischaemia

- Immediate refer to vascular surgeon
- (Balloon angioplasty ± intravascular stent Bypass surgery or Amputation)

Acute ischaemia

- Need immediate referral to vascular surgeon
- Heparin anticoagulation
- Surgical or radiological (aspiration) embolectomy
- Thrombolytic therapy

*** in acute iscahemia case – revascularization (pharmacological or surgical means) must be within golden hour (6 hours)

In critical ischaemia → whether limb saving surgery or life-saving amputation depending on viability of limbs

VENOUS DISORDER

Deep vein thrombosis and pulmonary embolism is important disorder especially in surgical patients.

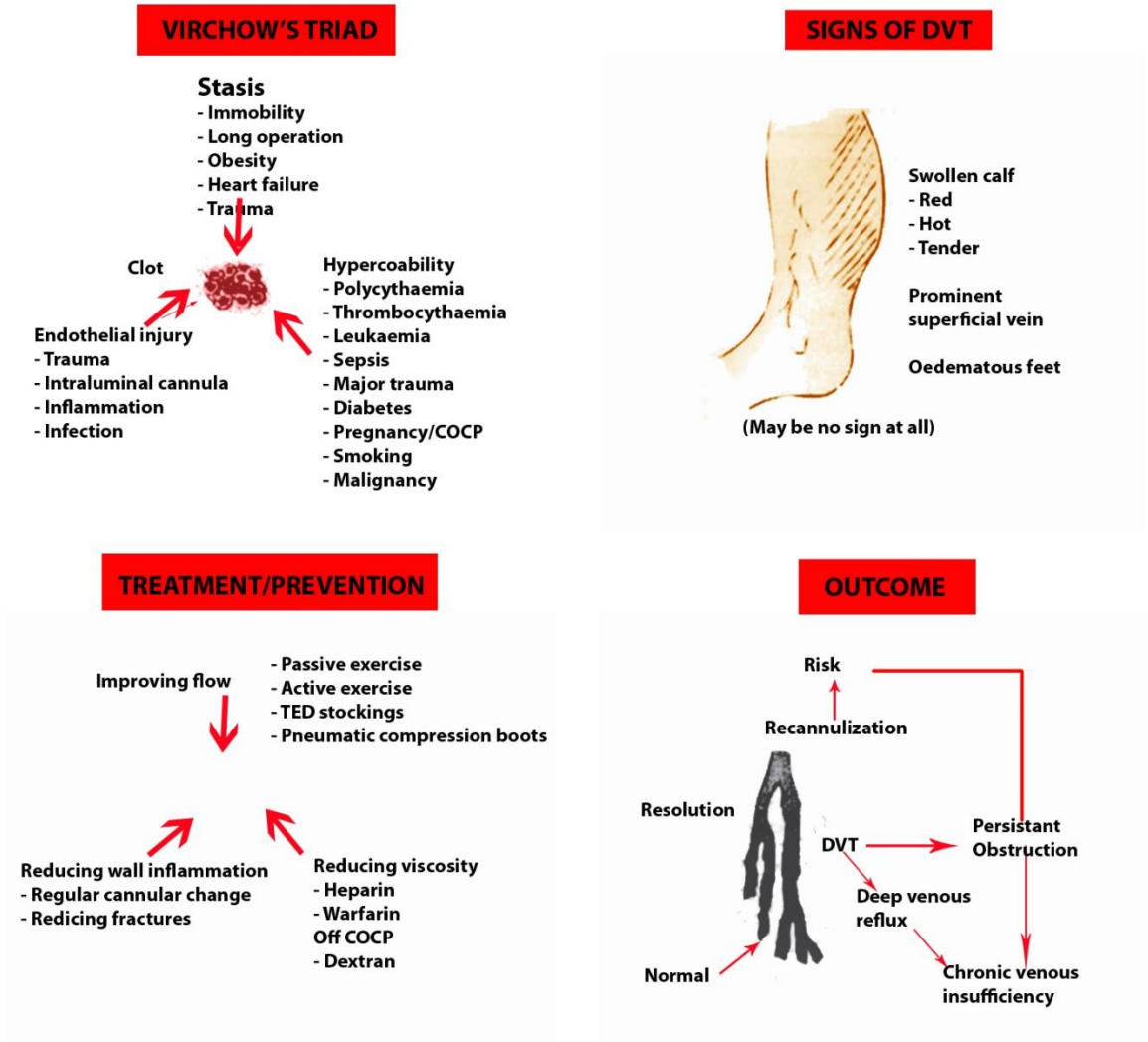
DVT

Wells' clinical prediction score for DVT (quantifies probability of DVT)

Active cancer	+1
Post bed rest for >3 days or major surgery	+1
Entire leg swelling	+1
Pitting oedema	+1
Collateral superficial veins (non-varicose)	+1
Paralysis or recent POP lower limb	+1
Tender over deep venous system	+1
Calf swelling >3 cm over other leg	+1
Previous documented DVT	+1
Alternative diagnosis more likely	-2

Probability of DVT: high ≥3, medium 1 or 2, low 0.

PATHOPHYSIOLOGY, SIGNS, TREATMENT AND OUTCOME OF DVT



WOUND INFECTION AND WOUND CARE

Wound: disruption of normal skin structure and function due to internal or external injury. Chronic wounds are those unresponsive to initial therapy or persistent in spite of appropriate care.

Healing process – very complex orchestral cascade of biomedical and cellular process triggered by tissue injury.

Healing phases – vascular response, inflammatory response, proliferation and maturation

Factors affecting wound healing – advanced age, smoking, underlying disorders (diabetes, cancer, malnutrition, dehydration), other treatment modalities (chemotherapy and radiotherapy), and poor wound care and surgical technique.

WOUND CARE

- For the wound care proper wound assessment is essential.
- Information – patient and family member on the extent of the problem (odour of the wound, amount and types of exudates, and type of wound), nursing and medical notes, direct observation, and history and physical examination of other organ systems.
- Clinical history and physical examination should include a certain minimum set of information.

WOUND MANAGEMENT

Four main principles: effective debridement, infection control, optimal dressing and promotion of healing

TIME: Tissue Management, Infection and Inflammation control, Moisture balance and Epithelial advancement

Wound cleansing and pressure relief

- Universal precautions should be followed at all times.
- Wound with no debris does not require cleansing.
- Irrigate wound with physiological solution (0.9% normal saline)
- Take swabs if necessary – take separate swabs for apparently separate areas
- Pressure relief – by repositioning time schedule and using pressure reducing devices (mattress, cushions, gutter, splint, etc. in limb oedema)

Tissue management

Debride all necrotic, poorly vascularized and infected tissues. Irrigate with saline. Antiseptic solutions are not recommended as they are toxic to human tissues and may delay healing. Dry hard eschar with normal looking surrounding skin may be left alone.

Infection control

Contamination – wound acquiring the pathogen transiently with no invasion or multiplication

Colonization – the microbial pathogen grows and multiplies but does not invade the host or interferes with wound healing

Wound infection – the infecting organisms interferes with the normal functioning of the host, utilizes the host's resources and interrupts the normal healing process.

Diagnosis – swabs for C &S must be obtained from relevant infected sites (separately) using aseptic technique

Plain X ray, Bone scan, and/or MRI scan in suspected osteomyelitis in exposed bone, open fracture, underlying internal fixation, gangrenous wound, persistent sinus tract, and non- healing wound are considered to confirm and assess the extent of infection.

Bone culture and biopsy should be obtained.

Treatment

- Supportive –reassurance to patient, pain relief
- Surgical drainage and debridement
- Systemic antibiotics in all established wound infections empirically and must change the antibiotic according to C&S results.
- Topical antibiotics are only use with precaution in wounds with poor blood supply, wound with frequent contamination, unsuccessful long term systemic antibiotics with bacterial resistant, antibiotic allergy and planned delayed primary closure.

WOUND DRESSING

Ideal dressing should protect, cleanse, optimize and promote the healing process.

Selection of dressing depends on:

- accurate assessment of wound e.g., heavy or slight exudative, odorous, sloughy and/or infected
- dressing types – alginate, hydrogel, hydrocolloids, surgical absorbent, low adherent, non-adherent foam, odour absorbing etc.,

Stage if healing process e.g., wounds required assisted debridement of sloughs, high absorbing intact dressing for infected exudates, moist environment for granulation tissue or promotion of the final healing and epithelialization stage

**During wounds assessment, if there is complicated wound, referral to specialist is advisable to improve patient's life and scar.

ACUTE RETENTION OF URINE

Definition

Sudden inability to pass urine associated with painful bladder distension

Causes

Local cause

- Prostatic enlargement (BPH or Ca prostate)
- Post- urological surgery. e.g., post TURP, clot retention
- Bladder or urethral stone impaction
- Pressure on bladder e.g., Late pregnancy, faecal impaction
- Pelvic organ prolapse in female, e.g. cystoclele, rectocele, uterine prolapse
- Urinary tract infection

General cause

- Pharmacological – e.g.- anticholinergic side effect of many drugs, anaesthetic drugs, alcohol intoxication, alpha sympathomimetic drugs
- Post – non urological surgery – abdominal surgery with lower abdominal pain
- And epidural or spinal anaesthesia
- Loss of normal neurological control – spinal injury, CVA, autonomic or peripheral lesion (e.g. –autonomic neuropathy, DM, Guillain-Barre syndrome)

Management

Confirm the diagnosis of Acute retention of urine

Symptoms

- SPA pain
- Inability to pass urine despite desire
- May dribble urine especially if there is underlying chronic retention

Signs

- Tenderness and mass in SPA
- Dullness at SPA on percussion

Emergency management

- give analgesia. It will help relaxation and may aid spontaneous micturition.
- warm bath or ice pack on SPA
- catheterize if retention persist, under aseptic condition
- Suprapubic catheterization if urethral catheterization failed of if there is known or suspected urethral disease
- Document initial volume passed after catheterization. Large volume suggest underlying chronic retention.

Find out the underlying cause
history

- Previous history of LUTS, urological surgery or injury
- Spinal injury

- Medications

Clinical examination

- Full clinical examination including neurological finding, rectal examination and vaginal examination (in female patients)

Investigations

- Urine RE, C & S
- Blood for FBC, U &E, Creatinine
- USG (abdomen)
- KUB X ray or X ray Bladder area if suspicious of stone

Early treatment

- Monitor renal function especially if there is underlying chronic retention. Renal function may deteriorate even often relief of the obstruction
- Monitor fluid balance in the first 48 hr if there is associated chronic retention. A secondary diuresis may occur.
- Start antibiotics according to local protocols if there is evidence of UTI

Definitive management

- Refer to urologist for definitive management.

PRINCIPLE AND STEPS OF PROCEDURES

- Abscess Incision and Drainage (I & D)
- Excision of cyst
- Nail avulsion

ABSCESS: INCISION AND DRAINAGE

- Abscess is commonly encountered among patients presenting for treatment in primary care offices and emergency departments.
- Cutaneous abscesses can occur in any area of the body but are commonly found in the
- axillae,
- buttocks, and
- extremities.
- Incision and drainage - the primary therapy for the management of cutaneous abscess;
- Abscess incision and drainage are most often outpatient procedures, most localized skin abscesses without associated cellulitis can be managed without antibiotics.
- Antibiotic treatment alone is inadequate for treating many loculated collections of infectious material.

Diagnosis of a skin abscess

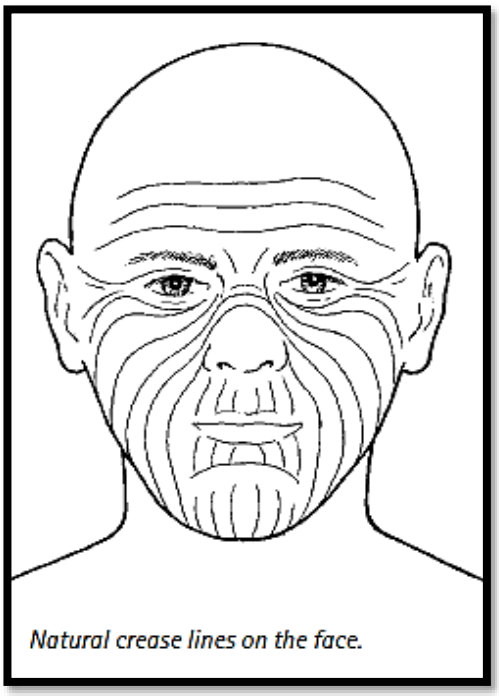
- The majority of skin abscesses - tender and fluctuant or erythematous with induration.
- diagnosis of an underlying abscess
- on the basis of swelling,
- pain,
- redness, and
- fluctuance
- Spontaneously draining skin abscesses
- Needle aspiration of a suspected skin abscess can facilitate the diagnosis of a localized abscess (in equivocal case)
- Use of ultrasonography is increasing and can be helpful for diagnosis.
- Once the diagnosis of an abscess is made, the next step is to determine whether incision and drainage are necessary.
- Most cutaneous abscesses are appropriate for incision and drainage when they are larger than 5 mm in diameter and are in an accessible location.

Contraindications

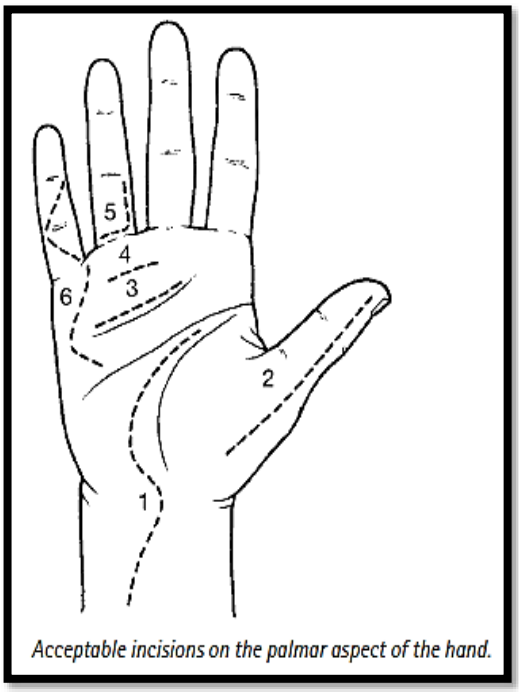
- Extremely large abscesses or deep abscesses in areas that are difficult to anesthetize
- may be treated more appropriately in a formal operating room.
- not indicated for cutaneous cellulitis without an underlying abscess.

Special considerations

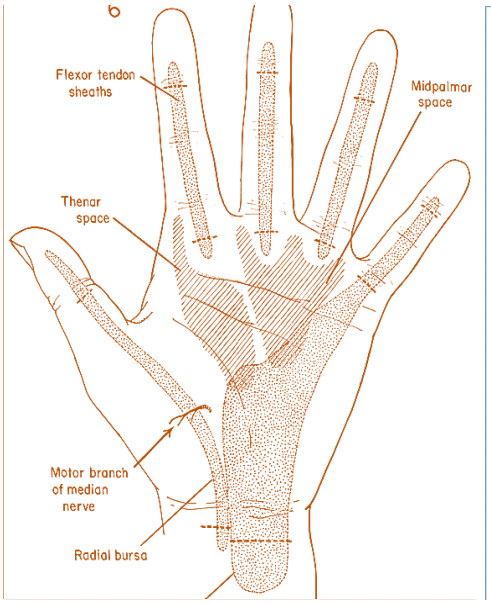
- The transient bacteremia associated with incision and drainage may require preoperative treatment with antibiotics
- reconsideration of the timing of the procedure for patients at increased risk for endocarditis, such as those with abnormal or artificial heart valves.
- Consultation with an appropriate surgical specialist -Abscesses of the palms, soles, or nasolabial folds
- Advice from an appropriate specialist -specific cosmetic concerns, such as the face or breast.

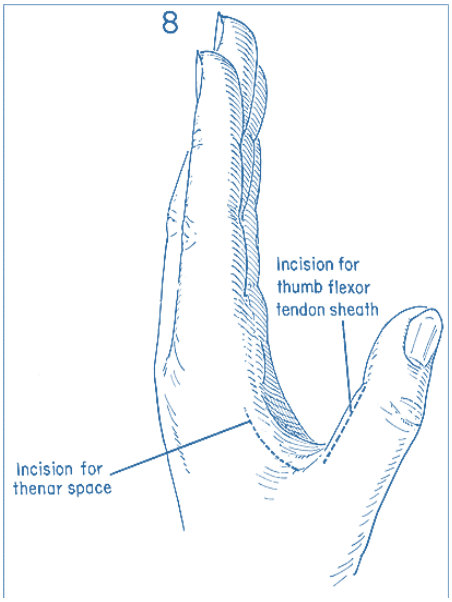


Natural crease lines on the face.



Acceptable incisions on the palmar aspect of the hand.





Equipment

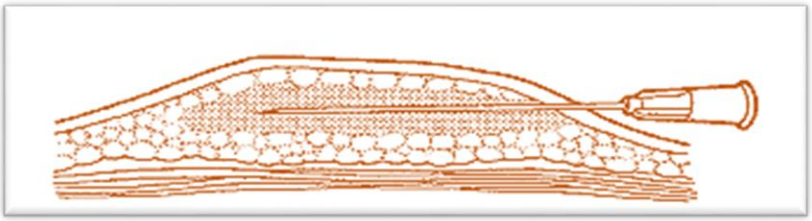
- Universal precautions for potential exposure to bodily fluids
- a gown, gloves, and a face mask with shield.
- Under aseptic and sterile procedures for abscess drainage whenever possible.
- Materials needed for the incision and drainage of an abscess
- For preparation and anesthesia, obtain a skin-cleansing agent, sterile gauze, local anesthetic, a 5-to-10-ml syringe, and a 25-gauge or 30-gauge needle.
- One percent lidocaine is an appropriate anesthetic for this procedure.
- Lidocaine with epinephrine offers advantages such as reduced bleeding and extended duration of action.
- Anesthetics with epinephrine are contraindicated in areas with a single blood supply, and their use in these areas is typically avoided.
- Bupivacaine is another option that offers an increased duration of action.
- a scalpel blade (number 11 or 15) with handle
- a small curved hemostat

- normal saline with a sterile bowl,
- a large syringe with a splash guard or a needleless 18-gauge angiocatheter for irrigation of the wound.
- Swabs for bacterial culture,
- wound-packing material, scissors, gauze, and tape should be available to complete the procedure and dress the wound.

Obtain informed consent after discussing the procedure and its risks and benefits to discuss the possibilities of pain, bleeding, and scar formation with patients before obtaining consent.

Time out-

- the correct patient,
- to identify the correct surgical site,
- to obtain agreement on the procedure to be performed, and
- to ensure availability of all necessary equipment.
- Wash your hands with antibacterial soap and water before beginning the procedure.
- Place all equipment within reach, on a bedside table.
- Position the patient so that the area for drainage is fully exposed and easily accessible, while ensuring the patient's comfort.
- Adjust the lighting to allow easy visualization of the abscess.
- Apply a skin cleanser, such as chlorhexidine or povidone iodine, in a circular motion, starting at the peak of the abscess.
- Cover a wide area outside the wound to prevent contamination of equipment.
- Anesthetize the top of the wound by inserting a 25-gauge or 30-gauge needle just under and parallel to the surface of the skin.
- Inject anesthetic into the intradermal tissues.



- Once the entire open bore of the needle is under the skin, use gentle pressure to infiltrate the skin with the anesthetic agent.
- will note blanching of the tissue as the anesthetic spreads out.
- Continue with infiltration until covered an area over the top of the abscess large enough to anesthetize the area of incision.

For some abscesses, additional injections of anesthetic in a local field block pattern, parenteral analgesic agents, or procedural sedation may be required for the patient's comfort.

ABSCESS INCISION AND DRAINAGE PROCEDURE

- Hold the scalpel between the thumb and forefinger to make initial entry directly into the abscess.
- Make an incision directly over the center of the cutaneous abscess;
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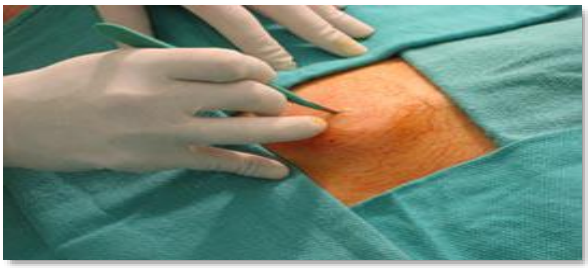
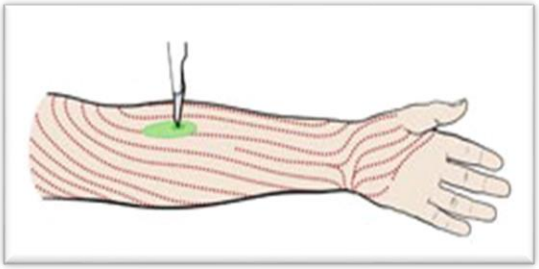
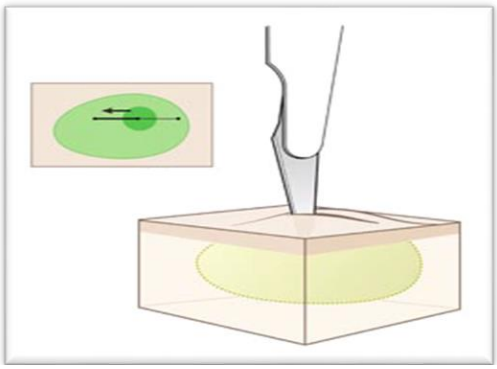
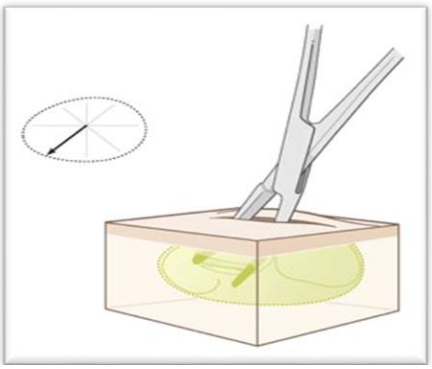
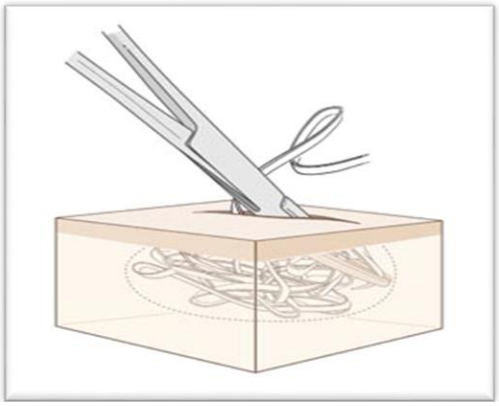




- the incision should be oriented along the long axis of the fluid collection.
- Subsequent treatment with antibiotics is not required after most successful incision and drainage procedures performed in healthy patients.
- Patients with extensive cellulitis beyond the abscess area or with significant comorbidities may require supplemental treatment with antibiotics.





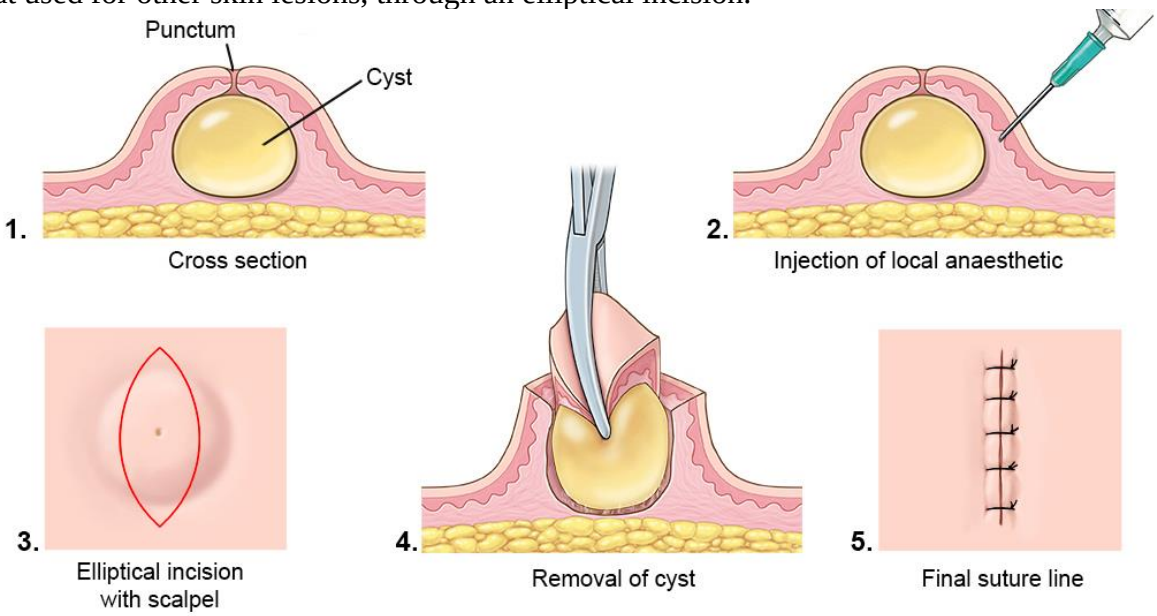


- Providers are encouraged to use local bacterial-culture susceptibility data to guide any such empiric therapy (if available for C&S)
- Knowing and following your regional management guidelines is imperative.
- Some communities have reported up to a 74% incidence of this pathogen in cutaneous abscesses, although there is no evidence to suggest that abscesses caused by community-acquired MRSA are more likely to require empiric antibiotic therapy.
- Cover the abscess wound with a sterile, nonadherent dressing.
- Check that the patient's tetanus immunizations are up-to-date.
- Remove packing material from all abscesses within a few days; schedule a follow-up appointment for 2 or 3 days after the procedure, to remove packing material from the wound.
- Instruct the patient to return before the scheduled appointment if there are any signs of worsening, including
- redness,
- swelling, or
- development of systemic symptoms such as fever.
- The acidic environment of infected tissue can lead to difficulties with providing sufficient anesthesia with local agents.
- Using appropriate amounts of anesthetic, allowing sufficient time after injection, or supplementing with oral or parenteral agents can increase the patient's comfort.
- Progression to surrounding cellulitis or lymphangitis, development of fever, or other signs of clinical worsening may mean that repeat incision and drainage or antibiotic treatment should be considered.
- If an abscess recurs despite adequate drainage, further investigation may be warranted to rule out underlying risk factors or abnormalities such as staphylococcal colonization or anatomic, immunologic, or infectious disorders.

- Most abscesses respond well to simple incision and drainage and do not require treatment beyond the changing of packing material and the application of local wound care.

EXCISION OF CYST

- Excision of sebaceous cysts is recommended as they enlarge, often become infected, and seldom regress spontaneously.
- It is important to excise them completely in order to prevent recurrence.
- They arise from the deep layers of the skin and are most satisfactorily excised in a similar manner to that used for other skin lesions, through an elliptical incision.



- The punctum, where the overlying skin is tethered to the cyst, should be in the centre of an ellipse.
- The length of the ellipse approximates the diameter of the cyst.
- The width of the ellipse is determined by planning the skin closure, and will vary with the degree of skin stretching that has occurred.
- First the skin ellipse is incised, and care must be taken not to enter the cyst with this initial incision.
- The plane is then developed immediately outside the cyst wall. This plane can be difficult to enter, especially where stretched skin is closely applied to the cyst wall.
- It is often easier to dissect initially at the two ends of the ellipse ensuring that the skin incision is full thickness into subcutaneous fat.
- Artery forceps, applied to the freed ends of the ellipse, and a skin hook placed under the lateral skin edge, can be used to retract and counterretract to identify the plane

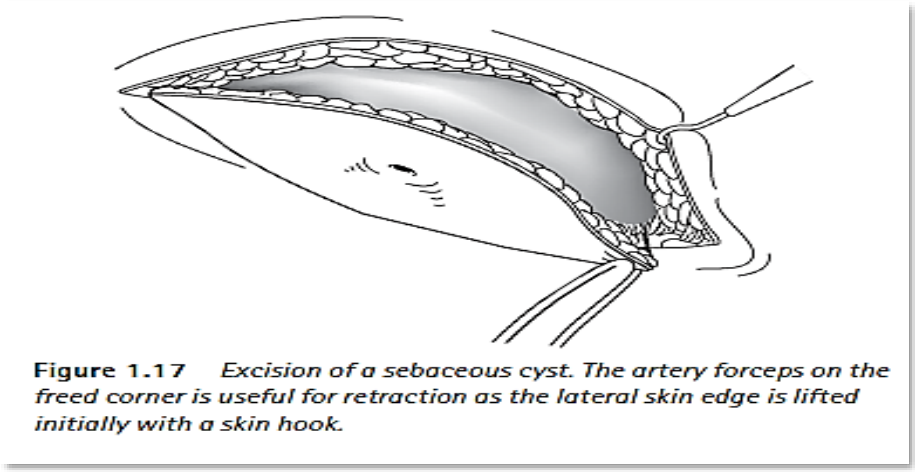


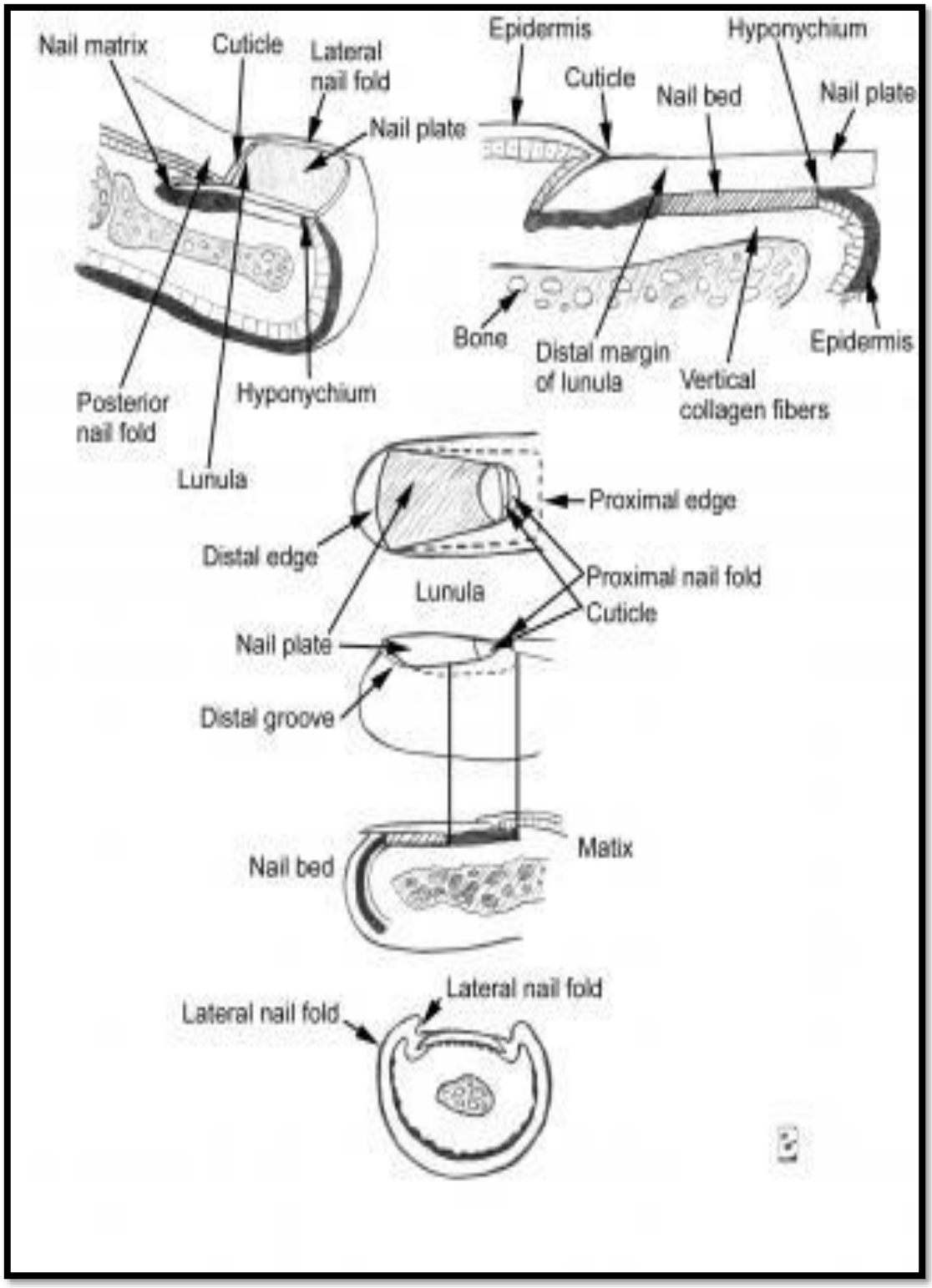
Figure 1.17 *Excision of a sebaceous cyst. The artery forceps on the freed corner is useful for retraction as the lateral skin edge is lifted initially with a skin hook.*

- In all dissections natural planes between structures can be found and developed by a blunt or a sharp method of dissection.
- In *blunt dissection*, reliance is placed on the assumption that natural cleavage occurs between structures.
- If however there is inflammatory scarring, the line of least resistance to separation may be through the cyst wall or out into the fat, and there is tearing of tissue.
- In all areas of surgery *sharp dissection* allows far more accurate dissection, and has the potential for more complete removal of pathology with preservation of delicate adjacent structures.
- Forceps or scissors can be used to develop a plane by blunt dissection.
- For sharp dissection the areolar tissue of the plane must be held on stretch and divided under direct vision with scissors, scalpel or diathermy.
- If any inflammation is present, removal of the cyst should be deferred until this has subsided.
- A frankly infected sebaceous cyst should be simply incised and the contents drained.
- No attempt should be made to excise it as wound complications and disappointing scars are often the result.
- In addition, the infection frequently destroys the lining of the cyst and no further treatment may be necessary. If the cyst does recur, excision can be planned at a later date.

NAIL AVULSION

- If a finger or toenail is avulsed the nail regrows from the nail bed.
- Avulsion can therefore only be a good surgical option for a self-limiting condition.
- For example, trauma to a digit – with the associated soft tissue swelling – can result in a previously trouble-free nail growing into the oedematous tissue of the nail fold and causing further damage and infection.
- The curved nails which cause ‘in-growing toenails’ are really only a chronic variant of this as the condition is almost unknown in bare-foot people.
- An avulsion to allow the infection to settle may be successful if the patient is prepared to adapt their nail cutting and footcare when the new nail regrows.
- A nail may also be avulsed to examine – and even biopsy – a dark stain under a nail when there is doubt as to whether this is a haematoma or a malignant melanoma. If, however, there have been recurrent problems with an ingrowing nail, or a nail is thickened with onychogryphosis, the nail bed must be removed, or destroyed, otherwise the problem will simply recur as the nail regrows.
- The nail bed may be excised using a Zadek’s operation (Fig. 1.18), or it can be destroyed with phenol.

- Either a general anaesthetic or a digital block is suitable for toenail surgery, and a toe tourniquet will give a bloodless field.



- The nail is first avulsed.
- One blade of a heavy artery forceps is introduced under the nail, either in the medial or the lateral third.
- Rotation of the closed forceps lifts the medial or lateral nail edge out of the basal corner and the nail fold
- The manoeuvre is repeated on the other side and the whole nail avulsed.
- The tissue overgrowth and proud granulations are curetted or excised from the nail folds.
- The raw nail bed is dressed with tulle gras, absorbent dressings and a crepe bandage. The distal

pulp skin should be visible beyond the dressing so that adequate perfusion can be confirmed.

- The nail bed is then dressed in the standard fashion.
- Recurrent nail growth may be a problem with either method but can be largely avoided by meticulous technique.
- Some patients with in-growing toenails are anxious to retain a toenail.
- It is possible to avulse only a lateral or a medial third of the nail, and then to excise or destroy only that area of germinal matrix.
  Unfortunately, the original problem may recur at the new edge of the nail, and many of these patients will finallyf need a full nail bed ablation.