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Emergencies in Palliative Care

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Learning Objectives

- Identify the major emergencies that can occur in palliative care and the causes
- Identify and discuss the signs and symptoms that indicate a palliative care emergency may be developing
- Examine the rationale for management and treatment options, in the overall context of the disease

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- What would you like to get out of this session??

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Introduction

- Patients in last year(s) of life may have reversible, treatable deteriorations some of which should be treated urgently
- Prompt / immediate diagnosis
- Potentially aggressive management.
- May create dissonance for staff or family.
- PC team must understand nature of emergencies and importance of emergency response

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General Principles

- Rapid assessment, evaluation, and management of symptoms
- Rapid reversal of what is reversible
- Some acute events in palliative care have to be treated as an emergency if a favourable outcome is to be achieved
- Be aware of 'potential' emergencies
  - Focus on anticipating emergencies and ensuring an appropriate plan is in place in advance
  - Share plan with patient/family

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Important Factors

- Nature of emergency
- Potential reversibility
- General physical condition of patient Disease status and likely prognosis
- Concomitant pathologies
- Symptomatology
- The likely effectiveness and toxicity of available treatments
- Quality of life
- Your clinical judgement
- Patients' and carers' wishes

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Important Emergencies

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Important Emergencies

- Hypercalcaemia
- Spinal cord /cauda equina Compression
- Respiratory distress (SVCO, non-malignant, effusions, stridor)
- Acute pain (Bone fractures)
- Neutropenic Sepsis
- Status Epilepticus
- Haemorrhage
- Anaphylaxis

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Particularities to consider for each emergency situation

- Incidence
- Aetiology/patients at risk
- Clinical Presentation – Signs and Symptoms
- Investigations
- Management
- Outcomes

Cases

- Small groups
- Mix of professional backgrounds and countries
- 3 real emergency situations

- Case 1 – Jane
- Case 2 – Molly
- Case 3 - Bob
- Case 4 - John

- 15mins discuss, present back to group

Case 1 - Jane

- 73yr old hairdresser
- Squamous cell carcinoma of oesophagus
- Admitted to hospice inpatient unit for symptom control of
  - Weakness/fatigue
  - Drowsiness + confusion
  - Nausea & vomiting
  - Constipation
  - Excessive thirst and polyuria

Hypercalcaemia

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- Corrected plasma calcium concentration >2.6 mmol/l
- Most common tumour-induced metabolic disorder in malignancy
- 10 - 20% patients
- Most commonly associated with
  - squamous cell tumours e.g. breast, bronchus, head & neck, oesophagus
  - multiple myeloma, lymphomas
  - Bone metastases
  - Renal and genitourinary tumours

Hypercalcaemia - Aetiology

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- Ectopic parathyroid hormone related protein (PTHrP)
- Locally active substances produced by bone metastases
- Ectopic cytokines
- Drugs e.g. thiazide diuretics and vit D and A supplements
- Increased osteoclastic activity (releases calcium from bone)
- Decreased excretion of urinary calcium
- Primary hyperparathyroidism - consider as differential especially if cancer otherwise stable

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Hypercalcaemia – Clinical Presentation

- Often mild and can be asymptomatic
- Significant symptoms usually only develop with levels above 3.0 mmol/l
- Symptoms often proportional to rate of rise

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Hypercalcaemia – Clinical Presentation

- Weakness/fatigue
- Loss of concentration
- Drowsiness
- Confusion
- Agitation
- Muscle spasms/tremors
- Anorexia
- Nausea
- Vomiting
- Thirst
- Polyuria
- Constipation
- Bone pain

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Hypercalcaemia - Management

- Supportive care and symptom control
  - Antiemetics
  - Laxatives
  - Analgaesia
- Careful explanation
- Fluid replacement

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Hypercalcaemia - Management

- Bisphosphonates
  - **Zoledronic acid** 4mg in 100mL sodium chloride 0.9% over 15 mins
  - **Pamidronate** 60-90mg in sodium chloride 0.9%, 500mL over 3-4 h
- Denosumab
- Calcitonin 800u/24h by **CSCI**

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Hypercalcaemia - Management

- Normocalcaemia should be achieved in 3-7 days
- If calcium is not falling, repeat dose of bisphosphonate
- Mean length of response 2-4 weeks for pamidronate, 4-6 weeks for zoledronic acid.
- ? Check serum calcium every 2 weeks.
- ? Maintenance therapy after two episodes
  - pamidronate 90mg **IV** every 4 weeks, or
  - zoledronic acid 4mg **IV** every 4 weeks, or
  - ibandronic acid **IV** or **PO**

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Hypercalcaemia - Outcomes

- Associated with a poor prognosis
- 80% of hypercalcaemic patients with cancer survive less than one year
- Levels of 4.0 mmol/l and above will cause death in a few days if left untreated

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Case 2 - Molly

- 70 yr old carer
- Squamous cell carcinoma of lung
- Severe Rheumatoid arthritis
- Admitted to hospice for symtom control of
  - Back pain
  - Falls
  - Episodes of urinary incontinence

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Spinal Cord Compression

- Indentation(s) of the spinal cord or cauda equina (if below L1/L2)
- Pressure from metastatic spread to / around the spine (or less commonly by a primary)
- Potentially with accompanying vertebral collapse / instability
- Threatens or is causing neurological disability

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Spinal Cord Compression – Incidence

- 5-10% of cancer patients with cancer
- Incidence increasing with advances in cancer treatment
- 10% of patients will have compression >1 site
- Immediately pre-treatment neurological function is the most powerful predictor of outcome
  - 70% thoracic spine
  - 10% cervical spine
  - 20% lumbar spine

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Spinal Cord Compression - Aetiology

- Compression of the spinal cord → neurological dysfunction / damage, altering transmission of impulses to & from the brain, can lead eventually to paraplegia or quadriplegia
- >75% of MSCC secondary to extradural compression from bone metastases in the vertebrae
- epidural disease (blood borne metastasis or extension from a vertebral metastasis)
- vertebral collapse

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Spinal Cord Compression – Clinical Presentation

- Symptoms and signs seen will depend on the site (spinal level) of compression
- Symptoms include: back pain, limb weakness, sensory loss and bladder or bowel dysfunction
- Many patients present initially with symptoms suggestive of spinal metastases
- Distinguishing the symptoms of spinal metastases from neurological symptoms or signs suggestive of **MSCC** will dictate the urgency of subsequent management

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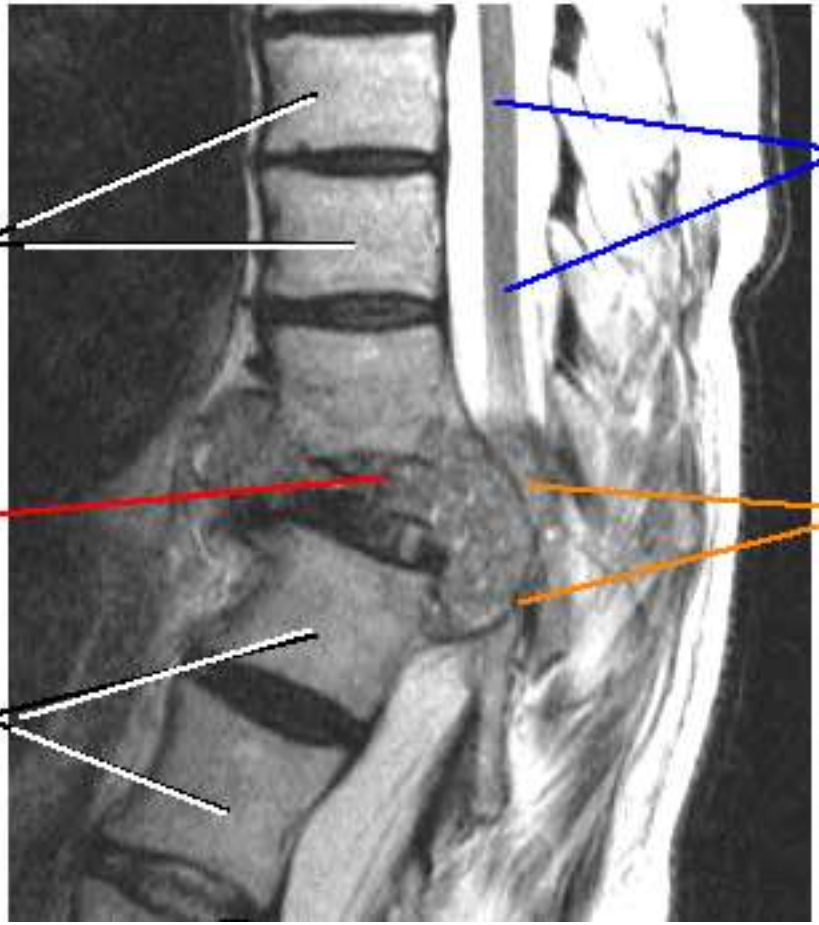
Symptoms suggestive of spinal metastases

- Increasing pain in thoracic or cervical spine
- Progressive lumbar spinal pain
- Severe unremitting lumbar spinal pain
- Spinal pain aggravated by straining
- Localised spinal tenderness
- Nocturnal spinal pain preventing sleep

MRI Image


normal vertebrae
normal spinal cord
cancer destroyed vertebra
spinal cord compression
normal vertebrae

Neurological symptoms/signs suggestive of Spinal Cord Or Cauda Equina Compression

- Radicular pain: radiates in distribution of nerve(s) e.g. ‘band like’ pain/ tightness around the chest (90%)
- Limb weakness e.g. heaviness of legs (75%)
- Difficulty walking or history of recent falls
- Sensory loss e.g. new feelings of clumsiness / weakness /falls
- Bladder or bowel dysfunction (40%)
- Other signs e.g. clonus or a sensory level (50%)

Spinal Cord Compression - Management

*** Treatment outcome is better, the earlier it is started ***

- Offer URGENT admission
- URGENT whole spine MRI (ideally within 24 hours)
- If **MRI** contraindicated, consider whole spine **CT**
- Nurse lying flat (supine) / log roll
- If neck pain consider cervical-spine immobilisation with Miami-J collar
- Dexamethasone 8mgs b.d. ± PPI cover (Monitor BM)
- Consider thromboprophylaxis
- Appropriate analgesia

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Confirmed or impending MSCC

- Careful explanation
- Cont treatment as above
- Consider urgent referral/discussion with spinal surgeons
- Urgent (within 24 hrs) discussion with oncologist regarding radiotherapy.

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Spinal cord compression - Management

- Urgent, fractionated radiotherapy (within 24 hours) if unsuitable for surgery unless:
  - complete paraplegia or tetraplegia for >24 hours and pain well controlled, or…
  - their prognosis is too poor
- Urgent referral to physiotherapy to assess spinal stability and commence appropriate rehabilitation
- Support services for assessment, advice and rehabilitation

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Steroid Management

- After surgery or radiotherapy, gradually reduce dose of dexamethasone after 4 to 5 days
- Follow local guidelines OR halve total daily dexamethasone dose every 4 to 5 days
  - 16mg to 8 mg to 4mg to 2mg to 1mg
  - 1mg alternate days for 4 to 5 days
- Review neurological function
- If neurological function worsens, increase steroid dose to previous dose where function was stable, continue for 2 weeks, before attempting reduction again.

Spinal cord compression - Management

- Malignant spinal cord compression (**MSCC**) co-ordinator
- Deciding the best course of treatment for a particular patient requires an overall assessment to include
  - patient wishes
  - Prognosis
  - Performance status
  - Co-morbidities
  - Oncology disease status
- **NICE** cautions against unnecessary investigation of patients too frail or unfit for specialist treatment

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Ongoing Management

- Mobility management
- Skin care
- Bowel interventions
- Urinary system management
- Psychosocial support
- Social and financial issues

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Spinal Cord Compression - Outcomes

- 30% patients with **MSCC** survive >1year
- Median survival 7-10 months
- Immediately pre-treatment neurological function most powerful predictor of outcome
- Function retained in ~70% patients ambulant prior to treatment, but will return in ~ 5% of those who were paralysed at the outset
- Hours can potentially make a difference to chance a patient remains able to walk or be continent
- Delays in starting treatment can result in irreversible neurological damage

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Case 3 - Bob

- 68 year old retired telephone engineer
- Adenocarcinoma of pancreas cancer with liver metastases
- Completed 9 rounds of chemotherapy 9 days ago
- Attended hospice as outpatient for physiotherapy session
- Feeling unwell, temp 38.7, reduced urinary output, tachycardic, tachypnoeic

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Neutropenic Sepsis

- Life-threatening
  - 'symptoms or signs associated with infection
  - neutrophil count $<1.0X10^9/L$
  - typically complication of chemotherapy
  - can result in rapid clinical deterioration and death
  - Often the earliest and only sign may be a fever

- Well-recognised but often poorly managed

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Early Onset Symptoms

- Chest Pain/Breathing Difficulties
- Temp >38°C
- Shivering
- Flu-like Symptoms
- Gum/Nose Bleeds
- Unusual Bruising
- Mouth Ulcers
- Vomiting
- Diarrhoea

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Late Stage Symptoms

- Restlessness
- Change in Conscious Level
- Cold/Clammy
- Hypotension
- Hypothermia
- Tachycardia

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Neutropenic Sepsis

- Low index suspicion
- Contact oncology centre urgently
- Rapid assessment and treatment is imperative
- **IV** antibiotics required within 60 mins
- Urgently transfer to acute inpatient setting
- Do not delay initiation of treatment, including empirical antibiotics

Case 4 - John

- 48yr old builder
- Squamous cell carcinoma of larynx
- Extensive local disease with massive fungating neck wounds
- Admitted to inpatient unit for symptom control of
  - Pain
  - dysphagia
  - low mood
  - management of neck wound

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Massive Haemorrhage

- Incidence 6 – 14% in adult patients with advanced cancer
- Can be terminal event
- Very frightening for the patient, family and carers.
- Identifying patients with potential risk of major haemorrhage should prompt advance care planning alongside the patient, their family and carers

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Massive haemorrhage - Predisposing factors

- Cancer related - abnormal clotting, platelet dysfunction
- Chemotherapy related – reduced platelet count
- Biochemical –hepatic dysfunction
- Pharmacological – NSAIDS, anticoagulants
- Tumour invasion – haemoptysis, carotid 'blow-out', GI bleed
- Herald bleeds

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Treatment of minor bleeds

- Radiotherapy
- Adrenaline, Tranexamic acid, Ethamsylate (topical)
- Systemic tranexamic acid (check C/I)
- Haemostatic dressings
- If major haemorrhage is anticipated
  - dark towels, gloves, suction
  - appropriate drugs (drawn up in syringe) kept available by the bedside

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Massive Haemorrhage – Should we discuss??

- Consider in advance
- Discussing issues of resuscitation
- Use of sedation, prophylactically and in the acute situation
- Whether family would/or would not want to be present
- Sensitive Communication
- To tell or not to tell

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Massive Haemorrhage

- By definition, terminal event
- Aim of treatment is to sedate as quickly as possible to relieve patient distress
- Speed (access to drug, and administration) is paramount
- Give drugs **IV** if at all possible; if not, deep **IM**
  - ⇨Stay with the patient
  - ⇨Stay calm
  - ⇨Supply of dark towels available

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Massive Haemorrhage

- Drug doses for rapid terminal sedation
  - Ketamine 150mg - 250mg IV or 500mg IM
  - Midazolam 30mg – 50mg IV or 20mg – 30mg IM

- If haemorrhage is brisk, but not inevitably and rapidly fatal, use lower doses appropriate for managing distress i.e. midazolam 5-10mg IM

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Superior Vena Cava Obstruction (SVCO)

- Impaired blood flow through the superior vena cava (**SVC**)
- SVCO is due to compression, obstruction or thrombosis impairing central venous return which leads to a build up of pressure behind the blockage
- Mediastinal lymph nodes or tumour in the region of the right main bronchus
- Fluid then seeps out from the bloodstream and collects in the tissues of the face.

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SVCO Incidence

- Rare
- 5-10% patients with cancer R lung
  - Carcinoma of bronchus (75%)
  - Lymphomas (15%)
  - Cancers of breast, colon, oesophagus and testis
  - Non-malignant causes 5 – 10 %

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SVCO – Clinical presentation

- Breathlessness (laryngeal oedema)
- Headache (cerebral oedema)
- Visual changes
- Dizziness
- Hoarse voice
- Swelling of face, neck and arms
- Engorged conjunctivae
- Peri-orbital oedema
- Non-pulsatile dilated neck veins
- Dilated collateral veins (chest and arms)

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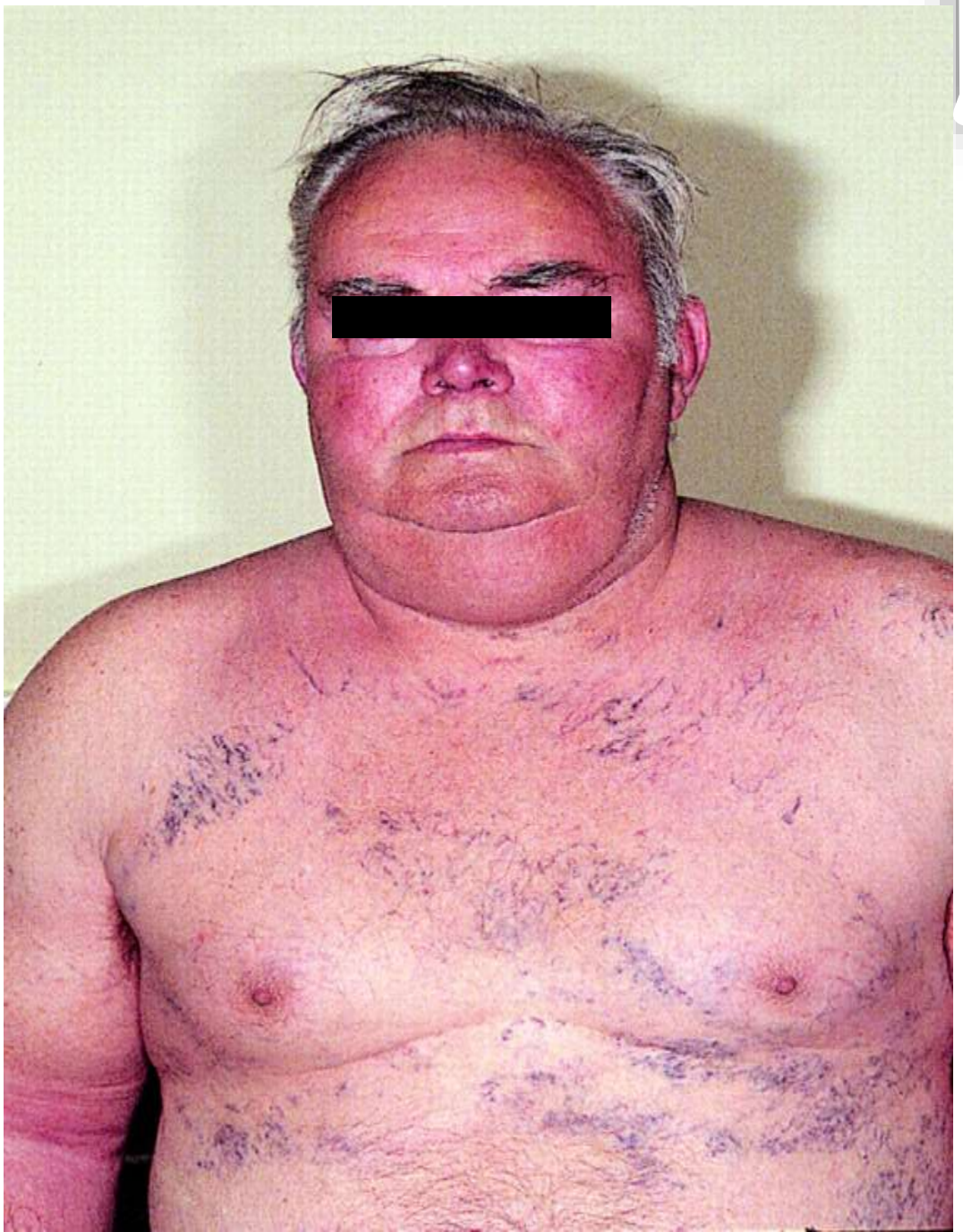

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SVCO - Management

- Investigations
  - CXR, USS, MRI, CT
- Upright position
- Oxygen
- Dexamethasone 16mg
- Furosemide 40mg
- Low-dose morphine 2.5 - 5mg 4-hourly for breathlessness
- Maintain calmness / consider low-dose anxiolytic

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SVCO - Management

- **Radiotherapy** - short course
- **Chemotherapy** if tumours are sensitive e.g. lymphoma small cell lung cancer, breast cancer
- **Stent –** Intraluminal stent, inserted via the femoral vein
- **Anti-coagulants** - if SVCO caused by a clot

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SVCO - Outcomes

- Poor prognosis
- Without treatment, can progress over several days leading to death
- With treatment
  - Average survival 8 months
  - 17% alive after 1year
- Prognosis worse when primary cancer causing the **SVCO** not responsive to radiotherapy or chemotherapy

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Convulsions & Seizures

- Primary or secondary brain tumours
- Metabolic complications
  - Hyponatremia
  - Hypoglycaemia
  - Hypercalcaemia
  - Pre-existing epilepsy
  - Cerebrovascular disease

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Emergency Management of Acute Seizures

- Safe positioning - recovery position
- Maintain airway
- Consider rapidly treatable causes e.g. hypoglycaemia
- Administration of anticonvulsant if seizure does not resolve within 5 minutes:

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Management of Seizures

- Midazolam 10mg buccal / 5-10mg SC/IM
- Diazepam 10mg PR
- Lorazepam 4mg slow IV (< 2mg/min)

- Repeat once after 15-20 mins if seizures persist

- N.B. Support relatives

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Prolonged Seizures

- Consider transfer to acute hospital if appropriate
- If not for transfer, treat refractory seizures with:
  - midazolam 20-30mg SC over 24 hours via syringe pump and titrate
  - phenobarbital 100–200mg IM stat followed by 200-600mg CSCI/24hrs

Status Epilepticus

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- Midazolam 5mg slow IV titration.
  - lorazepam 4mg slow IV
  - Diazepam10mg slow IV
  - clonazepam 1mg slow IV (into large vein)
- Repeat dose if needed after 10 minutes
- If no response to repeat dose or seizures recur
  - Phenobarbital 200mg slow IV
  - Repeat up to max 10-15mg/kg (600mg - 1000mg) at max rate of 100mg/minute

N.B. Once seizures have been controlled, review anticonvulsant therapy

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Anaphylaxis

1. Sudden onset and rapid progression of symptoms
2. Life-threatening compromise of
    - airway and/or
    - breathing and/or
    - Circulation
3. Skin and/or mucosal changes
    - flushing
    - urticaria
    - angioedema

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Anaphylaxis – Treatment guidelines

- ABCDE approach to assess and treat
  - Airway
  - Breathing
  - Circulation
  - Disability
  - Exposure
- Treat life-threatening problems as found
- Monitor patient closely - pulse oximetry, non-invasive blood pressure +/- 3-lead ECG

Anaphylaxis

- Adrenaline
  - 0.5ml of 1:1,000 adrenaline (0.5mg) IM
  - Repeat at 5-minute intervals if no improvement
- Comfortable position
- Oxygen (high flow)
- Fluids (rapid IV fluid challenge of 500–1,000ml)
- Antihistamines
  - 10mg chlorphenamine IM or slow IV
- Corticosteroids
  - 200mg hydrocortisone IM or slow IV

Conclusions

- Patients in last year of life may have reversible, treatable deteriorations some of which should be treated urgently
- Cord/cauda compression needs early identification as delays worsen outcome and quality of life
- High risk patients (prostate, kidney, breast, myeloma) and their carers should be made aware of warning signs of compression
- Low index of suspicion - do not delay starting high dose steroids

Conclusions

- Many chemotherapy patients do not remember that they are at risk of neutropenic sepsis. Beware the 7-10 day post chemo nadir.
- Treatment in oncology centre or acute hospital
- Treating hypercalcaemia can cause significant improvement in symptoms
- Haemorrhage and status epilepticus may be too distressing to manage at home - low threshold for hospice/hospital admission

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Mulțumesc

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- Abrahm JL. Management of pain and spinal cord compression in patients with advanced cancer. ACP-ASIM End-of-life Care Consensus Panel. American College of Physicians-American Society of Internal Medicine. (review) Ann Intern Med 1999;131(1):37-46
- Akram H, Allibone J. Spinal surgery for palliation in malignant spinal cord compression. (review) Clin Oncol (R Coll Radiol) 2010;22(9):792-800
- Bach F, Larsen BH, Rohde K, et al. Metastatic spinal cord compression. Occurrence, symptoms, clinical presentations and prognosis in 398 patients with spinal cord compression. Acta Neurochir (Wien) 1990;107(1-2):37-43
- Bilezikian JP. Clinical review 51: Management of hypercalcemia. (review) J Clin Endocrinol Metab 1993;77(6):1445-9
- Cardiopulmonary Syndromes. National Cancer Institute CancerNet PDQ database. Available from: www.cancer.gov/cancertopics/pdq/supportivecare/cardiopulmonary/healthprofessional

- Chisholm MA, Mulloy AL, Taylor AT. Acute management of cancer-related hypercalcemia. (review) Ann Pharmacother 1996;30(5):507-13
- Ellis SJ, Baddely L. Buccal midazolam and rectal diazepam for epilepsy. (comment) Lancet 1999;353(9166):1796-7
- Frawley T, Begley CM. Caring for people with carotid artery rupture. (review) Br J Nurs 2006;15(1):24-8
- García-Egido AA, Payares-Herrera MC. Managing hemorrhages in patients with head and neck carcinomas: a descriptive study of six years of admissions to an internal medicine/palliative care unit. J Palliat Med 2011;14(2):124-5
- Harris DG, Noble SI. Management of Terminal Hemorrhage in Patients With Advanced Cancer: A Systematic Literature Review. J Pain Symptom Manage 2009;38(6):913-27
- Hillier R, Wee B. Clinical management. Palliative management of spinal cord compression. Eur J Palliat Care 1997;4(6):189-92

References

- Hypercalcaemia. National Cancer Institute CancerNet PDQ database, 2000. Available from: cancernet.nci.nih.gov/pdq/ (accessed 9 Dec 2000)
- Hypercalcemia. National Cancer Institute CancerNet PDQ database. Available from: www.cancer.gov/cancertopics/pdq/supportivecare/hypercalcemia/healthprofessional
- Kovacs CS, MacDonald SM, Chik CL, et al. Hypercalcemia of malignancy in the palliative care patient: a treatment strategy. (review) J Pain Symptom Manage 1995;10(3):224-32
- Kozin E, Kapo J, Straton J, et al. Carotid blowout management #251. J Palliat Med 2012;15(3):360-1
- Kramer JA. Spinal cord compression in malignancy (review). Palliat Med 1992;6(3):202-11
- National Institute for Clinical Excellence. Metastatic spinal cord compression: diagnosis and management of adults at risk of and with metastatic spinal cord compression. Clinical Guideline, No. CG75. London: NICE, 2008. Available from: www.nice.org.uk/guidance/cg75 (accessed 9 Dec 2008)

References

- National Institute for Clinical Excellence. Neutropenic Sepsis: prevention and management of neutropenic sepsis in cancer patients . Clinical guideline, No. CG151. London: NICE, 2012. Available from: www.nice.org.uk/Guidance/CG151
- Resuscitation Council (UK). Adult advanced life support. London: Resuscitation Council (UK), 2005
- Schrijvers D. Emergencies in palliative care. Eur J Cancer 2011;47 Suppl 3:S359-61
- Scott RC, Besag FM, Neville BG. Buccal midazolam and rectal diazepam for treatment of prolonged seizures in childhood and adolescence: a randomised trial. (clinical trial) Lancet 1999;353(9153):623-6
- Soar J, Guideline Development Group. Emergency treatment of anaphylaxis in adults: concise guidance. Clin Med 2009;9(2):181-5
- Twycross R, Wilcock A, Howard P. Systemic corticosteroids . In: Palliative Care Formulary. 5th ed. PalliativeDrugs.com, 2014:501-502
- Wilson LD, Detterbeck FC, Yahalom J. Clinical practice. Superior vena cava syndrome with malignant causes. (review) N Engl J Med 2007;356(18):1862-9