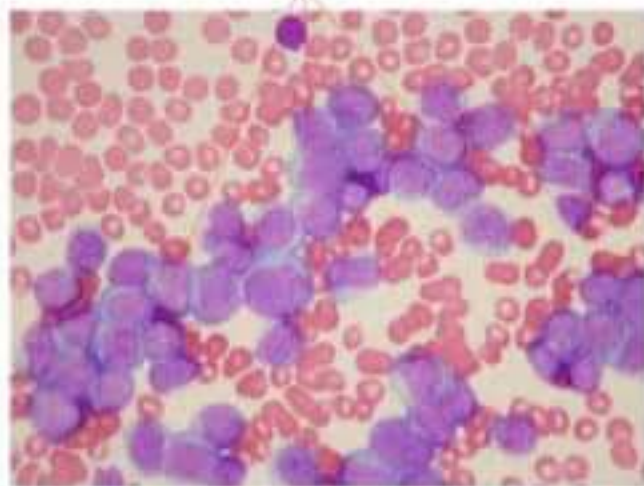


Oncologic emergencies



What is an Oncologic Emergency?

A clinical condition resulting from a metabolic, neurologic, cardiovascular, hematologic, and/or infectious change caused by cancer or its treatment that requires immediate intervention to prevent loss of life or quality of life.



Oncologic Emergencies

Introduction

- f* **Malignancy is 2nd leading cause of death in U.S.**
- f* **Now cancer has 52 % 5 year survival overall**
- f* **Rx of complications can be life-saving since causative tumor often is curable**
- f* **Rx of complications can, at a minimum, improve quality of life**

Causes

- Metastatic tumor from any primary site
- Tumors with predilection to metastasize to spinal column
- Prostate, breast, and lung carcinoma
 - 15-20% of cases
- Renal cell, non-Hodgkin's lymphoma, or myeloma
 - 5-10% of cases

Hypercalcemia

- Definition
 - Most common paraneoplastic syndrome
 - Ca^{++} leeches from the bone resulting in high serum calcium levels
 - Recall majority of Ca^{++} is stored in bones
 - High levels in serum result in illness
 - Seen in lung, breast, head/neck, kidney, multiple myeloma
- Another oncologic emergency
- Remember to correct calcium levels for albumen
(Measured $\text{Ca}^{++} + 0.8 \times (4 - \text{albumen})$)

Causes

- Metastatic tumor from any primary site
- Tumors with predilection to metastasize to spinal column
- Prostate, breast, and lung carcinoma
 - 15-20% of cases
- Renal cell, non-Hodgkin's lymphoma, or myeloma
 - 5-10% of cases

Metabolic Emergency (12)

- Hypercalcemia and Cancer
 - Most common paraneoplastic syndrome
 - 10 – 30% of patients with advanced cancer (carcinomas of the breast, lung, kidney, and head and neck)
 - Nausea, vomiting, constipation, polyuria, and disorientation
 - Bone destruction (osteolytic) or PTHrP (parathyroid hormone-related protein)
 - Treatment
 - Hydration
 - Bisphosphonates
 - Osteoprotegerin (inhibition of osteoclast differentiation)
 - Denosumab (fully human monoclonal antibody with a high affinity and specificity for RANKL)

Spinal cord compression

- Bone involvement from cancer LBTKP
 - Commonly: lung, breast, lung, myeloma, lymphoma
 - Less common: thyroid, kidney, bladder, bowel, melanoma
- Can be initial presentation of malignancy: prostate, breast, myeloma
- Crush fracture or tumour extension common
- Occasional intramedullary METS
- 66% cases: thoracic cord
- Symptoms:
 - Back pain: within a nerve root, worse on coughing/straining
 - Saddle anaesthesia
 - Urinary retention/dribbling/incontinence – late
 - Constipation/dribbling/incontinence of faeces – late
 - Loss of power and sensation distal to area of obstruction
 - Limb weakness/unsteadiness when walking
 - Brisk reflexes early, absent reflexes late

Spinal Cord Compression

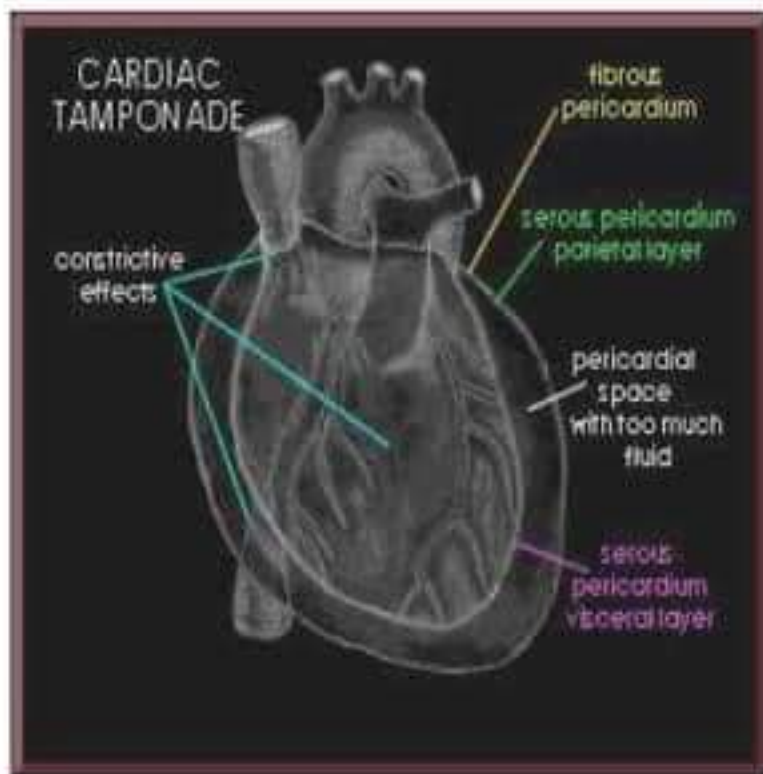
- **Pathophysiology.**
- The most common scenario for cord compression is the direct extension of a metastatic lesion from the vertebrae into the epidural space.
- Although metastatic lesions are more common, cord compression may be the initial presentation of the tumor.
- Half of the metastatic lesions are due to lung, breast, or prostate cancer.
- The most common site of compression is the thoracic spine (70%). The lumbar spine 20%, cervical spine 10%.
- Intradural: Spinal cord tumour

Summary – Spinal cord compression

- Signs:
 - Reduced tone in legs
 - Reduced reflexes late. Brisk early.
 - Decreased power and sensation
 - Reduced anal tone
 - Upgoing plantars (late)
- Investigations
 - MRI whole spine
 - Bone scan (radioisotope)
 - If no Hx of malignancy, investigate for malignancy – CT chest/abd/pelvis
- Management
 - Bed rest and catheter
 - **DEXAMETHASONE 8MG BD IV/PO**
 - Analgesia
 - Surgery or radiotherapy to METS (20Gy in 5fractions over 5days)
 - Indications for surgery: survival likely >3m, single site compression, no systemic disease, previous radiotherapy to spine, unknown 1o requiring Dx, bone fragment compressing cord, no response to steroids, no cancer



Pericardial Tamponade



Pericardial effusion develops and compresses ventricle reducing cardiac output and collapsing the right atrium increasing venous back pressure.



Malignant Pericardial Tamponade

SIGNS: Beck's triad

- **Jugular venous distension.**
- **Pulsus paradoxus** –venous return drops when intra-thoracic pressure raised.
- **Soft heart sounds** or pericardial rub.
- Poor cardiac output – tachycardia with low BP and poor peripheral perfusion.

Malignant Pericardial Tamponade

- Dx :
 - Echocardiography
 - Equalization of heart chamber pressures
- Rx options :
 - Needle catheter pericardiocentesis
 - Pericardial window under local anesthesia
 - Radiation Rx
 - Pericardiectomy
 - Intrapericardial chemoRx or sclerosis

SIADH

- Inappropriate or ectopic secretion of ADH
 - Tumors
 - 40% of small cell lung cancer pt (poor prognosis)
 - Cytotoxic agents
 - Vincristine, cyclophosphamide, cisplatin
 - Drug, fluids to prevent cystitis
 - brain lesions, narcotics

SIADH

Symptoms

- **Altered mental status**
 - lethargy
 - confusion
- **Anorexia, nausea, vomiting**
- **Peripheral edema**
- **If severe, coma or seizures**

SIADH

Treatment

- Serum Na > 125 usually not require Rx
- Fluid restriction only, if mild
- Furosemide with NS bolus (increases free water clearance)
- Hypertonic saline (3 %) only needed for :
 - seizures
 - coma
 - cardiovascular compromise
- Only correct at about 1 meq/liter/hour (if too fast can cause central pontine myelinolysis)
- Seizure control with benzodiazepines