Unobserved Station No. 1

1) Indications of its Intravenous Use?
2) If administered subcutaneously, what is its peak action time?
3) Give its side effects?

1) a) Diabetic Ketoacidosis
   b) Hyperkalemia
   c) Hyper osmolar non-ketosis
   d) Diabetes and surgery
2) 2-4 Hours
   a) Hypersensitivity reaction (Urticaria, Rash)
   b) Hypoglycemia
   c) Fat Hypertrophy or atrophy at injection site.

Unobserved Station No. 2

1. Describe the Abnormality?
2. What is the most likely underlying diagnosis?
3. Name the diagnostic test?
4. What are the four Treatment options?

1. This an autoimmune neuromuscular disease leading to fluctuating muscle weakness and fatigue. It is an autoimmune disorder, in which weakness is caused by circulating antibodies that block acetylcholine receptors at the postsynaptic neuromuscular junction,[1] inhibiting the excitatory effects of the neurotransmitter acetylcholine on nicotinic receptors throughout neuromuscular junctions. So underline cause is autoimmune disorder.
2. Edrophonium (Tensilon) test

Medication

- Acetylcholinesterase inhibitors: neostigmine and pyridostigmine can improve muscle function.
- Immunosuppressive drugs: prednisone, cyclosporin, mycophenolate and azathioprine may be used.

Plasmapheresis and IVIG

Surgery

thymectomy

Physical activi

Inspiratory mu **erapy**

Unobserved Station No. 3

34 years old gynaecologist suffering from bipolar affective disorder for last 4 years is on prophylactic lithium therapy since one year. Now for past few months she feels pulse has become slow, voice becoming somewhat hoarse and she has developed intolerance to cold.

1) What possibly is wrong with this woman?
2) What are the other clinical signs that you will look for?

KEY:

1) The patient has developed lithium induced hypothyroidism.
2) **Psychological signs:** Action and speech slow, apathy, impairment of concentration and memory.

Physical signs: Distinctive facial appearance with on-pitting oedema receding hair line, deep coarse voice, dry rough skin and hair, slow pulse, delayed tendon reflexes.

Look for signs of hypothyroidism and ask for thyroid function tests

Unobserved Station No. 4

1) Identify the drug?
2) Name at least 4 uses?
3) Name at least 4 side effects?

KEY:

1) Injection hydrocortisone
2) Anaphylactic shock, acute asthma, COPD, IBD
3) Osteoporosis, HTN, DM, skin atrophy, Muscle weakness.

Unobserved Station No. 5

13 year old girl presented with fever, arthralgia and photosensitivity.

1) What abnormality is shown?
2) What is the diagnosis?
3) Name two complications of this disease?
4) Name the two diagnostic tests?

KEY:

1) Malar rash / Butterfly rash
2) Systemic lupus erythematosis
3) Renal failure. Hepatitis, hemolysis, thrombocytopenia
4) ANA, Anti double stranded DNA

Unobserved Station No. 6

1) List four first line anti-tuberculous drugs.
2) Give two side effects of any three drugs.

KEY:

1) Rifampicin, Isoniazid, Ethambutol, pyrazinamide
2) Rifampicin: Hepatotoxicity, Interstitial Nephritis.
INH: peripheral neuropathy, hepatotoxicity
Ethambutol: retrobulbar neuritis, peripheral neuropathy
PZA: Hepatotoxicity, hyperuricaemia

Unobserved Station No. 7

1) What are the finding?
2) What tests would you advise?
3) Name three diseases this condition is associated with.

KEY:

1) Xanthoma
2) Fasting lipid profile
3) Diabetes, Familial hyperlipidemias, Hypothyroidism.

Unobserved Station No. 8

1) What is the lesion?
2) Why is eyelid drooping?
3) Name two important causes for this lesion.

KEY:

1) Third never palsy
2) Levator palpebrae superioris is supplied by occulomotor nerve
3) Diabetes, vasculitis, Rheumatoid arthritis, systemic lupus erythematosus, aneurysm of posterior communicating artery.

Unobserved Station No. 9

1) What is the diagnosis?
2) What is the immediate treatment of this patient if he reports in first three hours after paralysis?
3) What will be the secondary prophylaxis for this patient?

KEY:

1) Cerebral Infarction.
2) Tissue plasminogen activator (tPA)
3) Aspirin, Good BP, diabetic control, lipid lowering drugs, perindopril and indapamide.

Unobserved Station No. 10

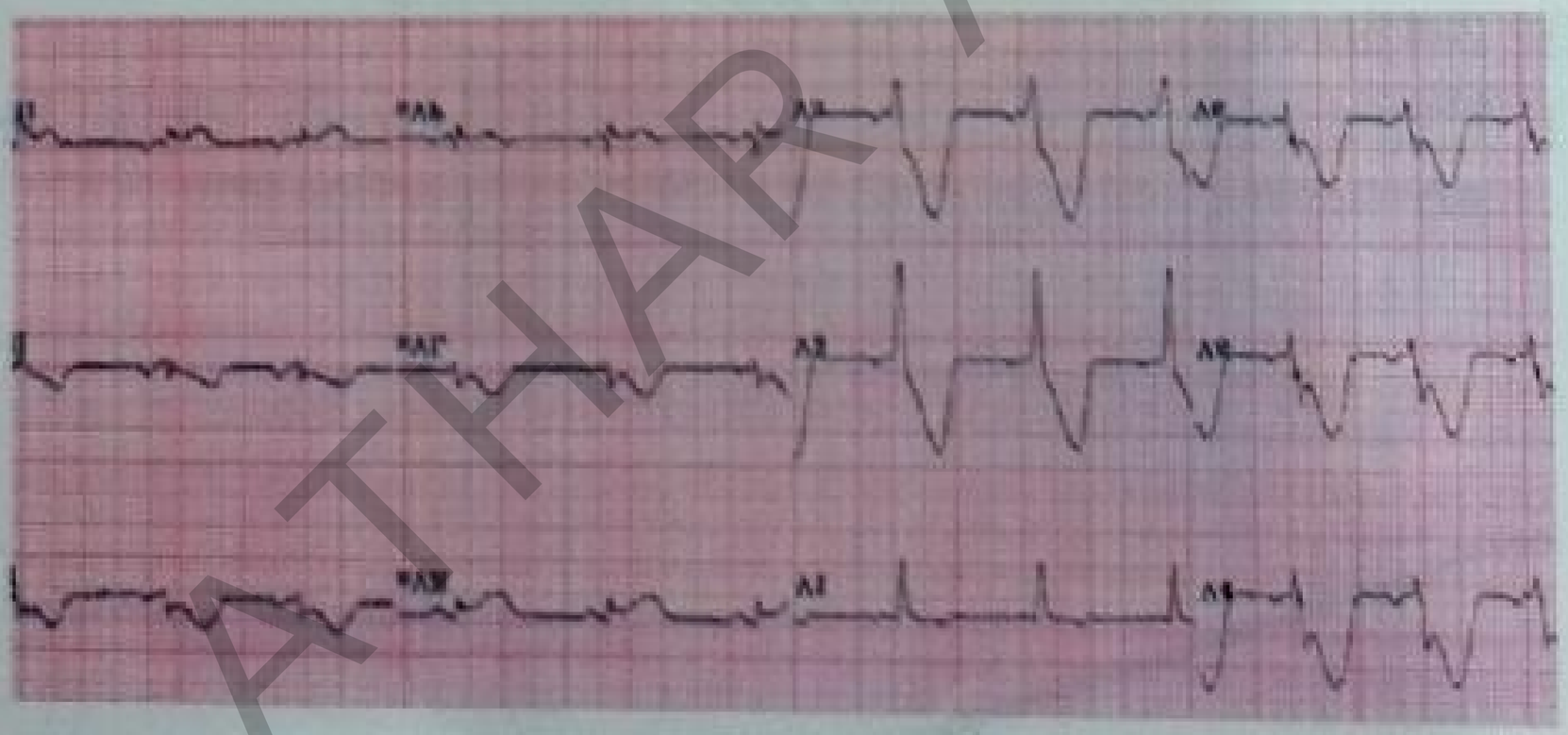
13 years old boy is admitted to hospital with two years H/O social isolation, odd behaviour and academic decline. Psychiatric examination establishes anxiety and depression of mood, compulsive acts, recurrent intrusive and distressing thoughts and perfectionistic / obsessional personality traits.

1) Enlist your differential diagnosis (atleast 4).
2) What is the most likely diagnosis in this case?
3) Name 4 pharmacological agents likely to help this patient.

KEY:

1) Obsessive compulsive disorder, OCD with depression, major depressive episode, schizophrenia, adolescent crisis of identity.
2) Obsessive compulsive disorder.
3) Clomipraine, fluoxetine, Fluvoxamine, citalopram and venlafaxine.

Unobserved Station No. 11



1) Describe three abnormalities?
2) What is the diagnosis?
3) What three immediate management steps will you take for this patient?

1) Q waves in V1-V4, T wave inversion, ST segment elevation in V3-V6.
2) Acute MI
3) Oxygen, Dispirin, Analgesics, thrombolysis.

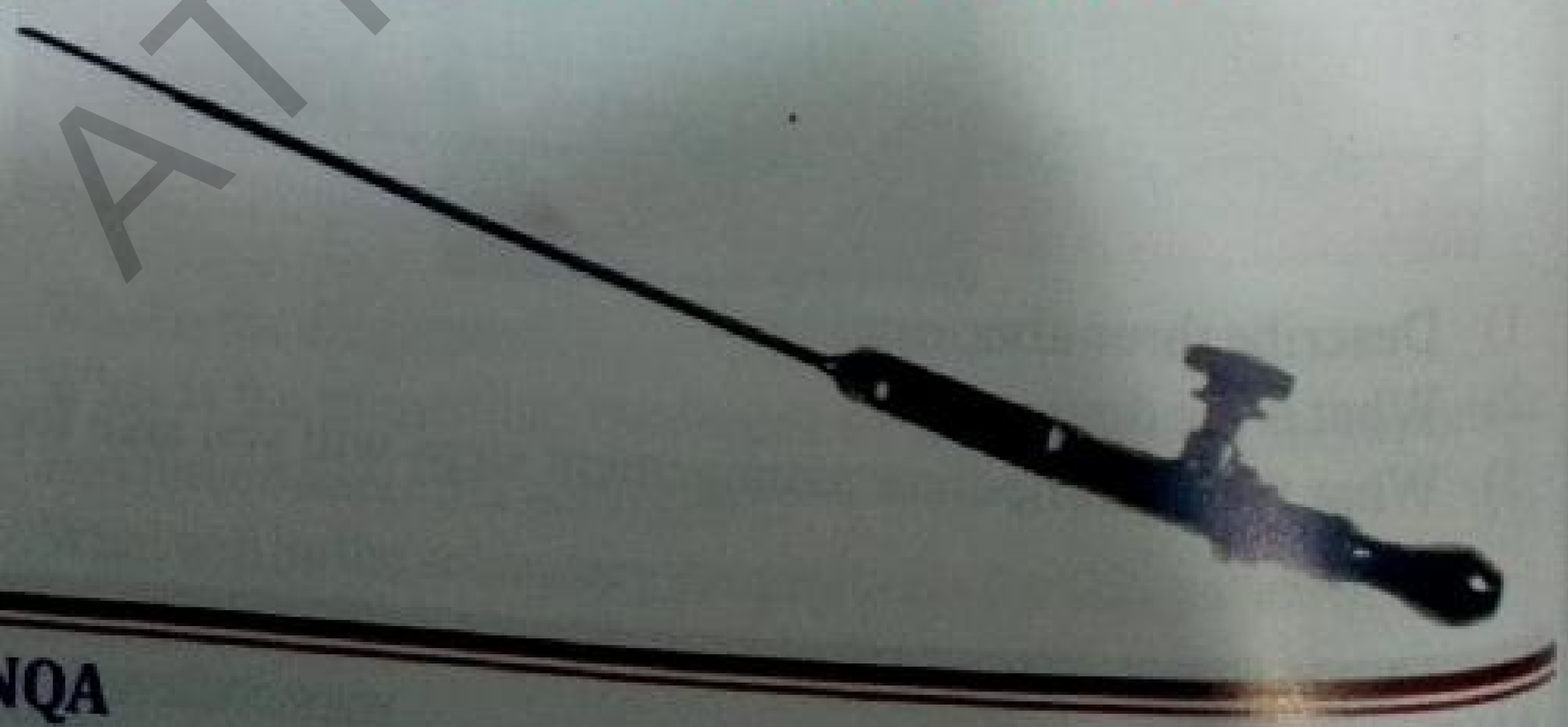
Unobserved Station No. 12

1) Two indications of its use?
2) When injected subcutaneously what is its peak action time?
3) List 2 side effects.

KEY:

1) Diabetic ketoacidosis, Hyperkalemia, hyperosmolar non ketosis, diabetes and surgery.
2) 2-4 hours
3) Hypersensitivity reaction (urticarial, rash etc.), hypoglycaemia, fat hypertrophy / atrophy at injection site.

Unobserved Station No. 13



1) Identify the instrument.
2) Name the 6 indications of proeudre done by this instrument.
3) What is the normal protein content of CSF?

KEY:

1) Lumbar puncture needle
2) Alumbur puncture is done to:
Find a cause for symptoms possibly caused by an infection (like meningitis), inflammation, cancer or bleeding in the area around the brain or spinal cord (like subarachnoid haemorrhage).
Diagnose certain disease of brain and spinal cord such as multiple sclerosis or GB syndrome.
Measure the presence of CSF in the space surrounding the spinal cord. If the pressure is high , it may the cause of certain symptoms.
Put anaesthetics or medicine in the CSF. Medicines may be injected to treat leukaemia and other types of cancer of the CNS.
Put a dye in the CSF that makes the spinal cord and fluid clearer on X-ray pictures (myelogram). This may be done to see whether a disc or a cancer is bulging into the spinal cord.
In rare cases, a lumbar puncture may be used to lower the pressure in the brain caused by too much CSF.
3) 20-40 mg/dl.

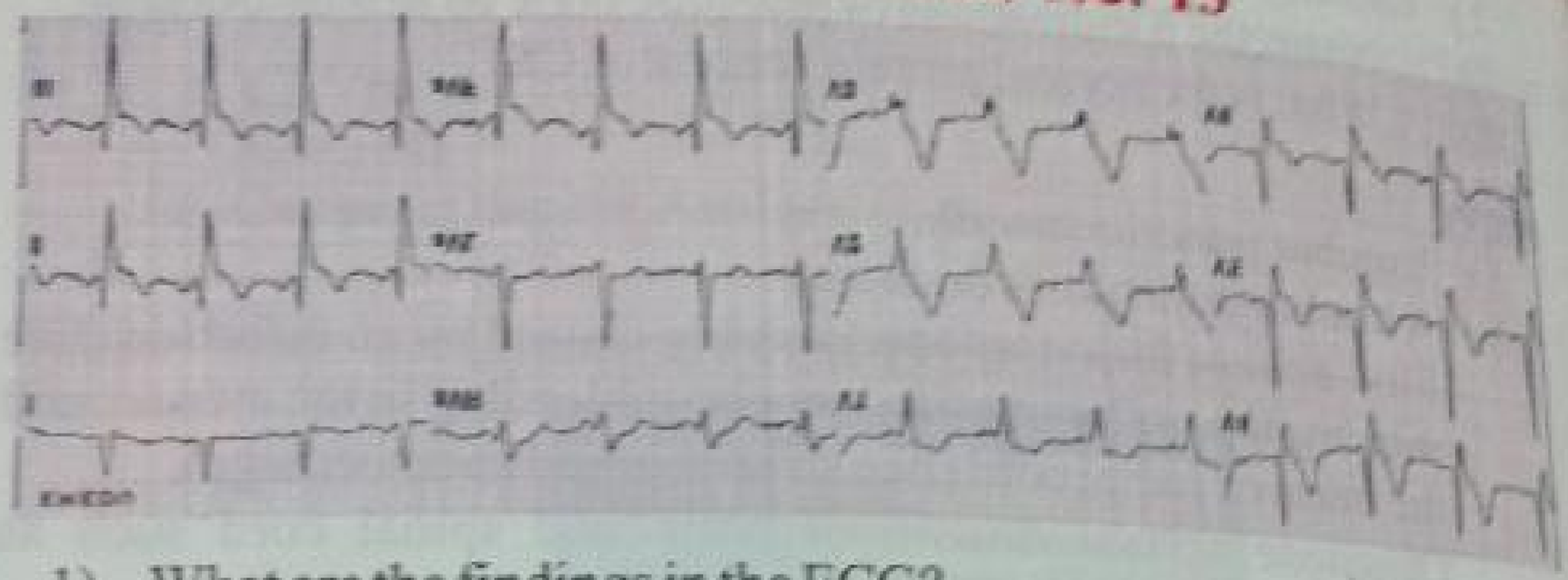
Unobserved Station No. 14

1) What is the diagnosis?
2) Name two causes.

KEY:

1) Acanthosis Nigricans
2) Diabetes Mellitus, Carcinoma of stomach, ovary, lung, occult malignancy.

Unobserved Station No. 15



1) What are the findings in the ECG?
2) What is the most likely diagnosis?
3) Mention 3 immediate steps in the treatment.

KEY:

1) ST segment elevation in leads V2-V5.
2) Anteroseptal myocardial infarction.
3) Oxygen inhalation.
   Injection Morphine.
   Thrombolytic therapy.

Unobserved Station No. 16

Match acid base disorder with clinical diagnosis.

1	Metabolic acidosis with ↑ anion gap	Hysterical hyperventilation
2	Respiratory alkalosis	Primary hyperaldosteronism
3	Metabolic alkalosis	Chronic renal failure
4	Respiratory acidosis	Renal tubular acidosis
5	Metabolic acidosis with normal anion gap	Chronic obstructive airway

KEY:

1) 1 & 3
2) 2 & 1
3) 3 & 2
4) 4 & 5
5) 5 & 4

Unobserved Station No. 17

A young girl of 19 years has presented in the emergency with severe dehydration, hypotension, tachypnoea and disorientation. Her ABG's report is as follows:
pH 7.2
pCO_2 27 mmol/L
HCO_3 14 mmol/L

1) What is the metabolic abnormality?
2) Name two causes of this abnormality.
3) What important investigations would you like to carry out immediately?

KEY:

1) Metabolic acidosis
2) Diabetic ketoacidosis,renal failure, severe diarrhea.
3) Blood sugar, urine for ketones.

Unobserved Station No. 18

1) Tell the name.
2) What is the indication of its use?
3) Tell three complications of its use?

KEY:

1) IV Cannulla
2) To maintain IV access.
3) Blockage, haemorrhage, infection etc.

Unobserved Station No. 19

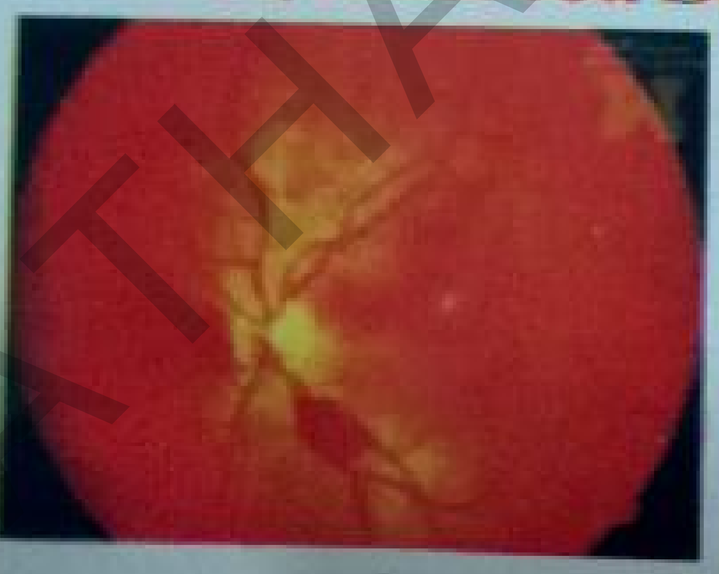
This young lady complains of palpitations and intolerance for heat with 7 kg weight loss in two months.

1) What two signs could be appreciated ?
2) What is the most likely diagnosis?
3) Mention three possible modalities of treatment?

KEY:

1) Lid retraction and diffuse swelling in front of neck.
2) Graves disease.
3) Pharmacological : carbimazole
   Surgical: subtotal thyroidectomy.
   Radioactive iodine therapy.

Unobserved Station No. 20



A

B

A 28 year old known case of rheumatic heart disease presents with fever for 3 months, weight loss and anorexia. On examination a pansystolic murmur is heard and he has splenomegaly.

1) What is the diagnosis?
2) Name the physical signs shown in the above pictures.
3) What two investigations will you order?

KEY:

1) Infective endocarditis.
2) Roth spots (B), Splinter haemorrhage (A).
3) Blood culture, echocardiography.

Unobserved Station No. 21

1) Name three clinical findings on CXR?
2) Name two expected findings on clinical examination of this patient?

KEY:

1) Riodiolical findings:
   a) Tubular heart
   b) hyperinflated lungs
   c) widening of intercostal spaces
   d) flat diaphragm.
2) Clinical findings:
   a) Barrel shaped chest
   b) reduced chest expansion
   c) hyper resonant percussion note
   d) prolonged expiration and ronchi.

Unobserved Station No. 22

1) Give three emergency clinical situations for its use?
2) Write down four long term adverse effects of this drug?

KEY:

1) Emergency situations: (any three)
   a) Status asthmaticus
   b) Addisonian crisis
   c) Anaphylactic reaction
2) Long term adverse effects: (any four)
   a) Fluid and salt retention
   b) Osteoporosis
   c) Hypertension
   d) Hyperglycemia
   e) Myopathy
   f) Hypokalemia
   g) Increased frequency of infections
   h) Impaired wound healing
   i) Psychosis
   j) Depression
   k) Cataracts
   l) Glaucoma
   m) dyspepsia

Unobserved Station No. 23

25 years old boy has a sore throat 2 weeks back and has now presented with weakness of legs. On examination there is LMN typer of lesion in both lower limbs.

1) What is the diagnosis ?
2) Name 2 tests of the diagnosis of this disease?

KEY:

1) Guillian Barre Syndrome.
2) a) LP/CSF analysis.
   b) Nerve conduction study.

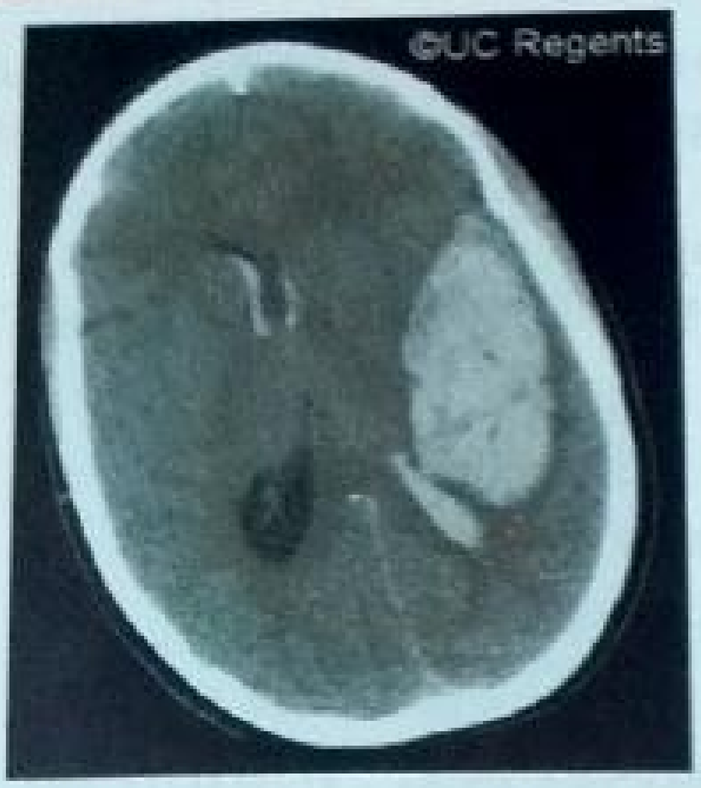
Unobserved Station No. 24

1) Describe the abnormality ?
2) What is the most likely underlying diagnosis?
3) Name the diagnostic test.
4) What are the four treatment options?

KEY:

1) Bilateral ptosis and lack of facial expression
2) Myasthenia gravis
3) Edrophonium (Tensilon) test
4) A. pyridostigmine
   B. corticosteroids
   C. immunosuppressive therapy
   D. Thymectomy

Unobserved Station No. 25



1) What is the diagnosis?
2) List three causes?

KEY:

1) Cerebral haemorrhage.
2) a. hypertension
   b. aneurysm
   c. AV malformation
   d. Drugs like cocaine, anticoagulants

Unobserved Station No. 26

1) Name the investigations?
2) What are the findings?
3) Tell the diagnosis?

KEY:

1) X-ray chest PA view.
2) Homogenous opacity in lower side of chest.
3) Right pleural effusion.

Unobserved Station No. 27

1) What is being demonstrated?
2) Of which inherited disorder this may be a feature of?
3) At what age the symptoms usually commence?

KEY:

1) Joint hypermobility
2) Marfan's syndrome, Ehlers-Danlos syndrome, pseudoxanthoma elasticum.
3) Most commonly adolescence and young adulthood.

Unobserved Station No. 28

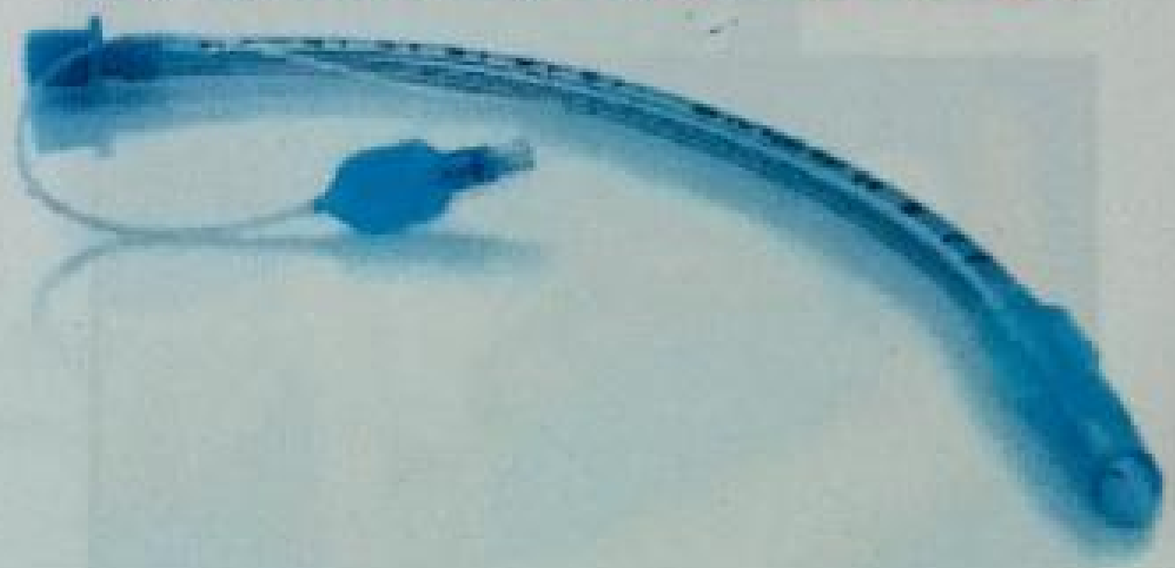
This patient is asked to look straight.

1) What is the abnormality shown?
2) Enumerate three causes for this condition.

KEY:

1) Complete ptosis of right eye.
2) 3rd nerve palsy, myasthenia gravis, horner's syndrome congenital.

Unobserved Station No. 29



1) Identify the instrument?
2) Name two indications of its use.
3) Name two complications of its use.

KEY:

1) Endotracheal tube with cuff.
2) a. during resuscitation of patient.
   b. ventilation of acute respiratory failure.
   c. ventilation of chronic respiratory failure.
   d. for general anesthesia.
   e. status asthmaticus after failure of medical treatment.
   f. Guillian Barre Syndrome.
   g. myasthenic crisis.
   h. acute respiratory arrest.
3) a. tracheal stenosis.
   b. tracheo-bronchial fistula.
   c. trauma to lips, teeth & tongue.
   d. trauma to posterior pharyngeal wall.
   e. injury to vocal cords.
   f. wrong placement in esophagus.
   g. aspiration of gastric contents.

Unobserved Station No. 30

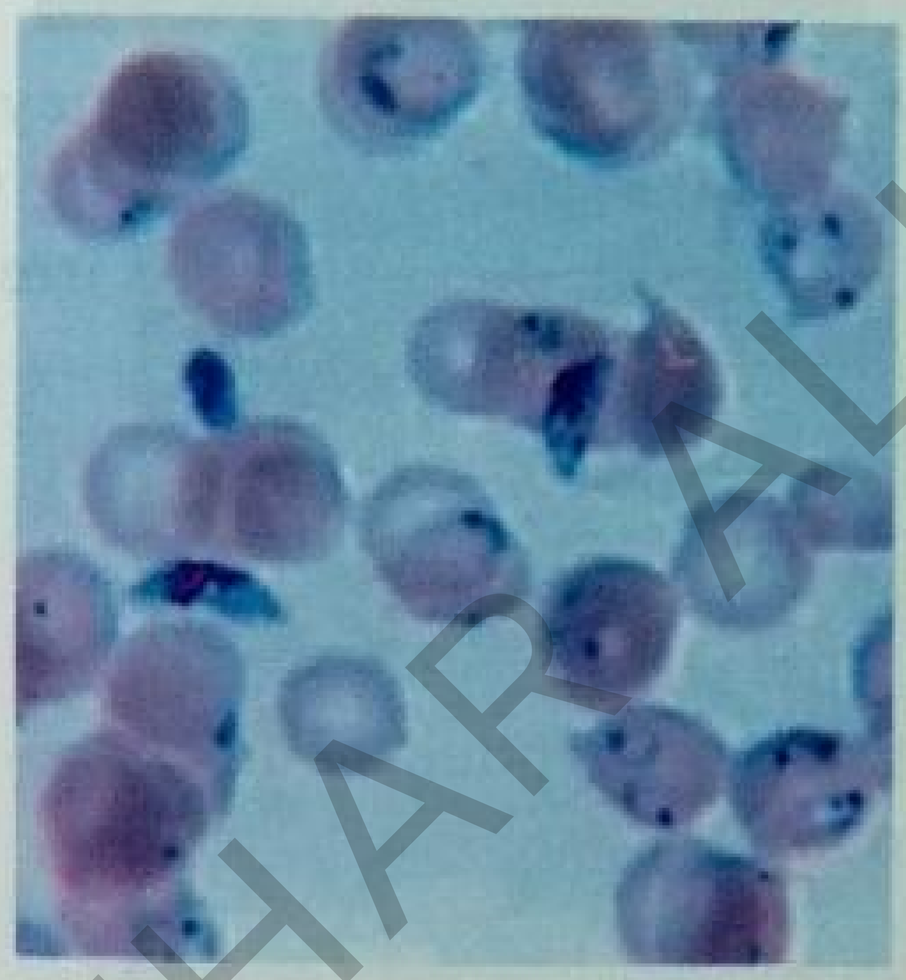
A [illegible] years old type II diabetic male is admitted with palpitations. His blood pressure was 150/100 mmHg. Pulse of 64/min, pitting edema and periorbital puffiness.

1) List the best choice for antihypertensive drug in this patient.
2) What three investigations would you request?

KEY:

1) Angiotensin receptor blocker / angiotensin converting enzyme inhibitor.
2) a. urine complete examination.
   b. creatinine / RFT.
   c. serum electrolytes.

Unobserved Station No. 31



A young men felt unwell with intermittent pyrexia and headache and treated himself for influenza. Three days later he was behaving odd and was referred to hospital.

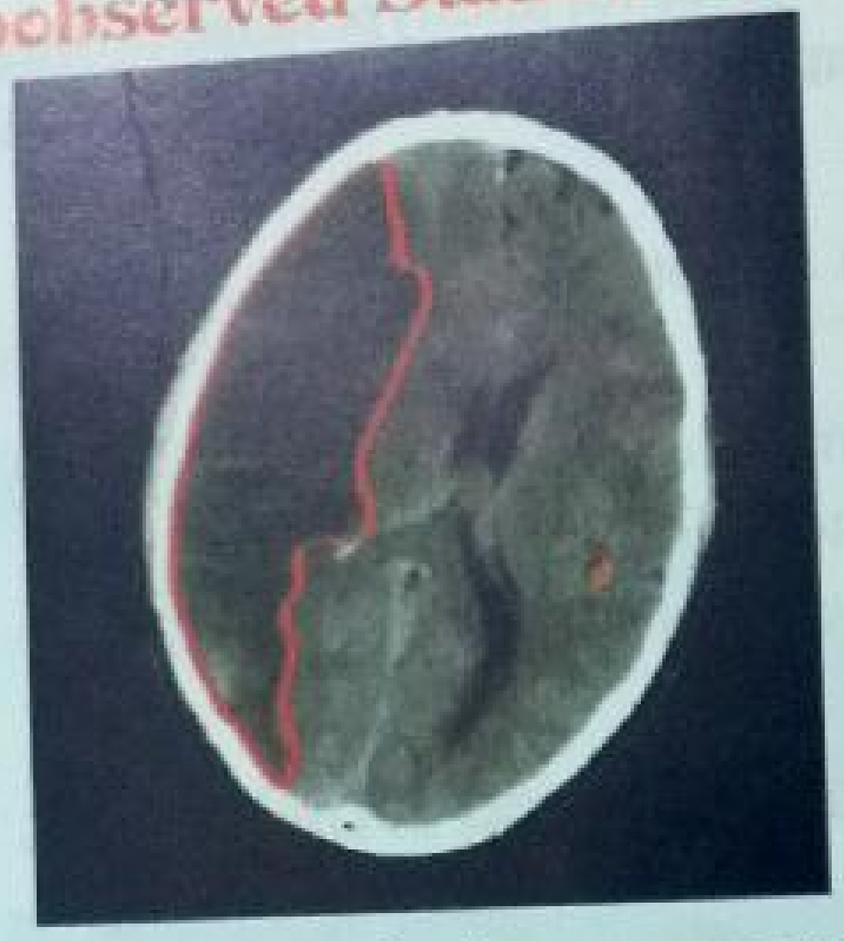
1) What does the peripheral blood film show?
2) What is the basis of his abnormal behaviour?
3) Is treatment urgent and what is the prognosis?

KEY:

1) Trophozoits (Rings) of plasmodium falciparum in RBCs.

1) Non uncommon in malignant tertian malaria. Occlusion of small blood vessels.
2) This is a medical emergency, immediate parentral treatmen should result in 90% recovery.

Unobserved Station No. 32



A 50 years old man was brought in emergency department wit sudden weakness of right side of body along with deviation o angle of mouth. On examination pulse was irregularly irregula CT brain is shown.

1) What is the finding on CT scan?
2) What is the possible underlying cause?

KEY:

1) Cerebral infarction / hypodense area.
2) Thromboembolism.

Unobserved Station No. 33

A seventy year old male living alone having poor appetite presents with bleeding gums.

1) What is the diagnosis?
2) What is the cause of this presentation?
3) What are the other symptoms of this disease?

KEY:

1) Scurvy.
2) Vitamin C deficiency.
3) Weakness, joint pains, bruises, gum disease, spongy gums. Untreated scurvy is always fatal but rare these days.

Unobserved Station No. 34

1) Name the investigation shown?
2) What is the finding?
3) What is the most probable diagnosis?

KEY:

1) X-ray KUB plain.
2) Bilateral irregular opacities in renal area.
3) Bilateral staghorn stones.

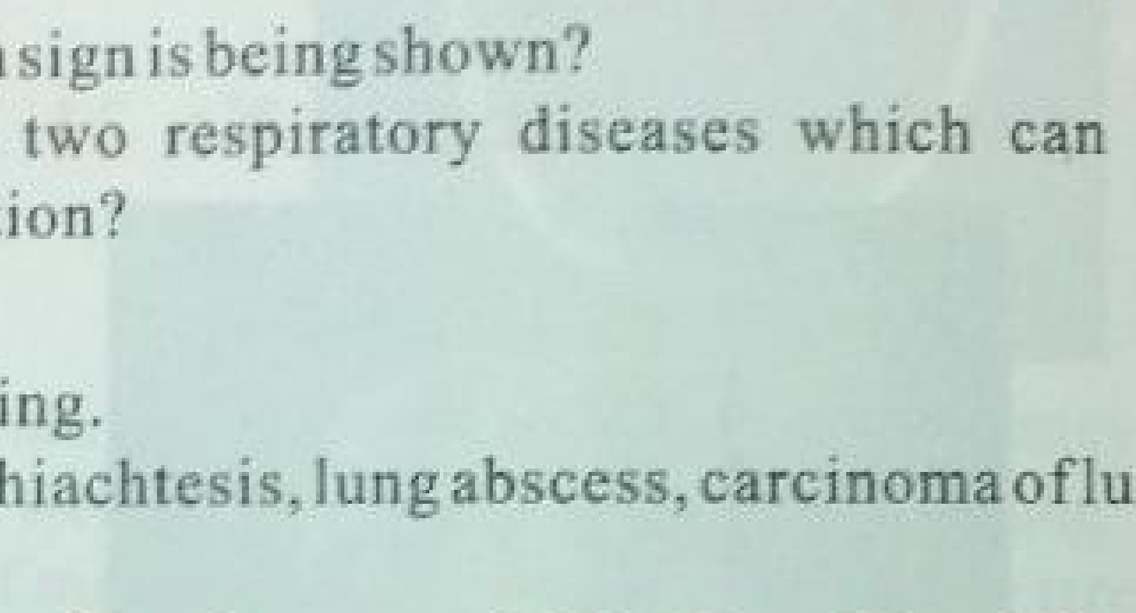
Unobserved Station No. 35

1) Which sign is being shown?
2) Name two respiratory diseases which can lead to this condition?

KEY:

1) Clubbing.
2) Bronchiachtesis, lung abscess, carcinoma of lungs.

Unobserved Station No. 36



This young lady presents with weight loss and increased appetite.

1) What is the diagnosis?
2) Write two cardiovascular complications of this disease?

KEY:

1) Grave's disease.
2) CCF, atrial fibrillation, hypertension.

Unobserved Station No. 37

A 45 years old man is to undergo appendisectomy. He is a known case of mixed mitral valve disease.

1) Which antibiotic prophylaxis would you prescribe?
2) What is the commonest cause of valvular heart disease in our country?

KEY:

1) I/V Ampicllin & Gentamicin.
2) Rheumatic fever.

Unobserved Station No. 38

A 38 years old diabetic has advanced renal disease. He has severe infection of his right indix finger. Culture of pus reveals that it is sensitive to Amoxicillin, gentamycin, Ceftriaxone, Ciprofloxacin, Levofloxacin.

1) Which drug would you avoid and why?

KEY:

1) a. Gentamycin
   b. It is Nephrotoxic.

Unobserved Station No. 39

A 15 year old girl presents with recurrent sore throat, joint pains and fever. Her ASO titer is raised.

1) Which drug would you use for prophylaxis?
2) List one important long term complication of this disease?

KEY:

1) Benzathine Penicillin.
2) Rheumatic heart disease.

Unobserved Station No. 40

1) Name two diseases in which it is use?

KEY:

1) Asthma, COPD.

Unobserved Station No. 41

1) Give three indications for the use of this drug?

KEY:

1) a. DVT
   b. Pulmonary embolism
   c. Unstable angina
   d. Stroke in evolution
   e. Atrial fibrillation

Unobserved Station No. 42

This smoker has shortness of breath.

1) What is the radiological diagnosis?
2) How can this condition be prevented?

KEY:

1) Emphysema
2) By stopping smoking.

Unobserved Station No. 43

1) What is the diagnosis?
2) Write down two causes which can lead to this condition?

KEY:

1) Left abducent nerve palsy.
2) a. Diabetes.
   b. Tumors.
   c. Vasculitis.

Unobserved Station No. 44

1) Give three causes which can lead to this condition?

KEY:

1) a. Chronic liver disease.
   b. Pregnancy.
   c. Thyrotoxicosis.

Unobserved Station No. 45

A 15 year old girl with congenital heart disease is to undergo dental extraction. She is allergic to penicillin.

1) Which antibiotic would be prescribed?
2) Name any two congenital heart diseases

KEY:

1) Cap. Clindamycin.
2) VSD, ASD, fallot's tetralogy.

Unobserved Station No. 46

A 50 year old man is suffering from advanced liver disease. His GP has prescribed him the following drugs:

a) Diazepam
b) Lactulose
c) Frusemide
d) Ciprofloxacin

1) Which drug should be avoided in this patient and why?

KEY:

1) a. Diazepam
   b. It can precipitate encephalopathy

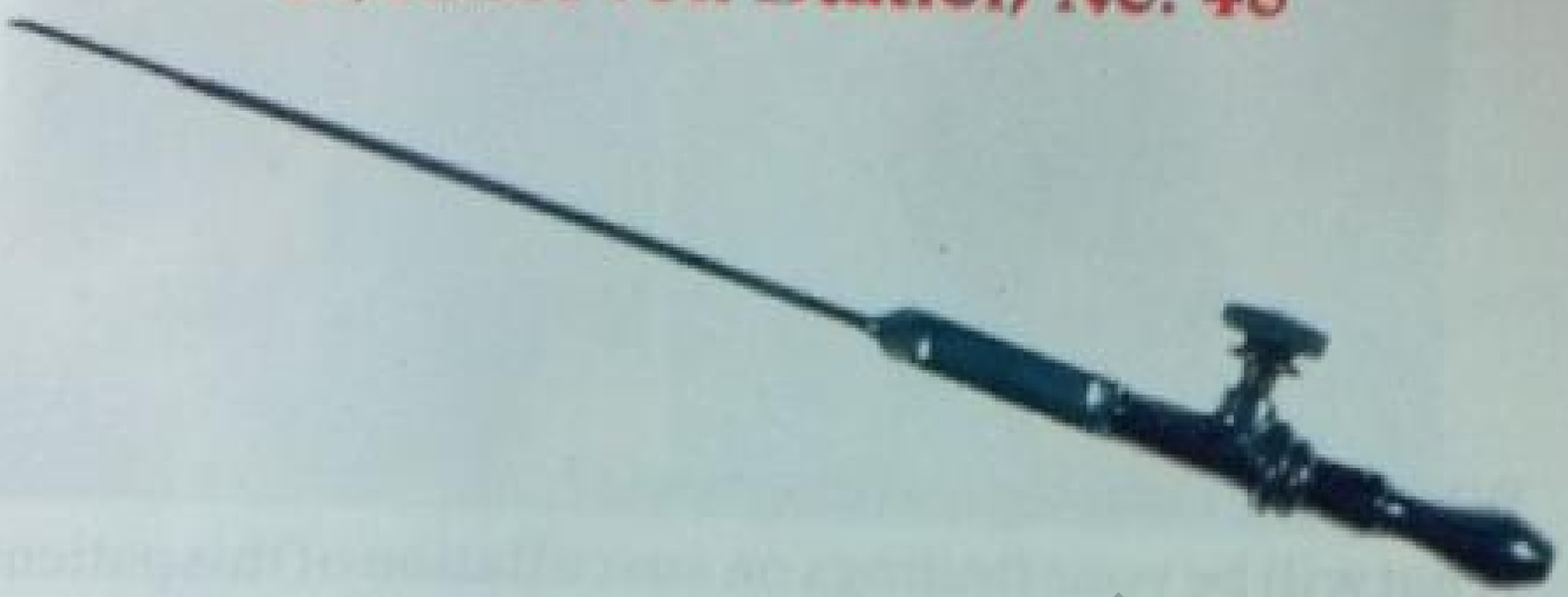
Unobserved Station No. 47

1) Name the commonest viral hepatitis transmitted through blood transfusion.
2) How it can be prevented?
3) Name one hepatitis virus transmitted through orofecal route.

KEY:

1) Hepatitis C
2) Screening of the donor
3) Hepatitis A or Hepatitis E

Unobserved Station No. 48



1) Identify the instrument?
2) Give one contraindication of its use.

KEY:

1) Lumbar Puncture needle
2) Papilloedema

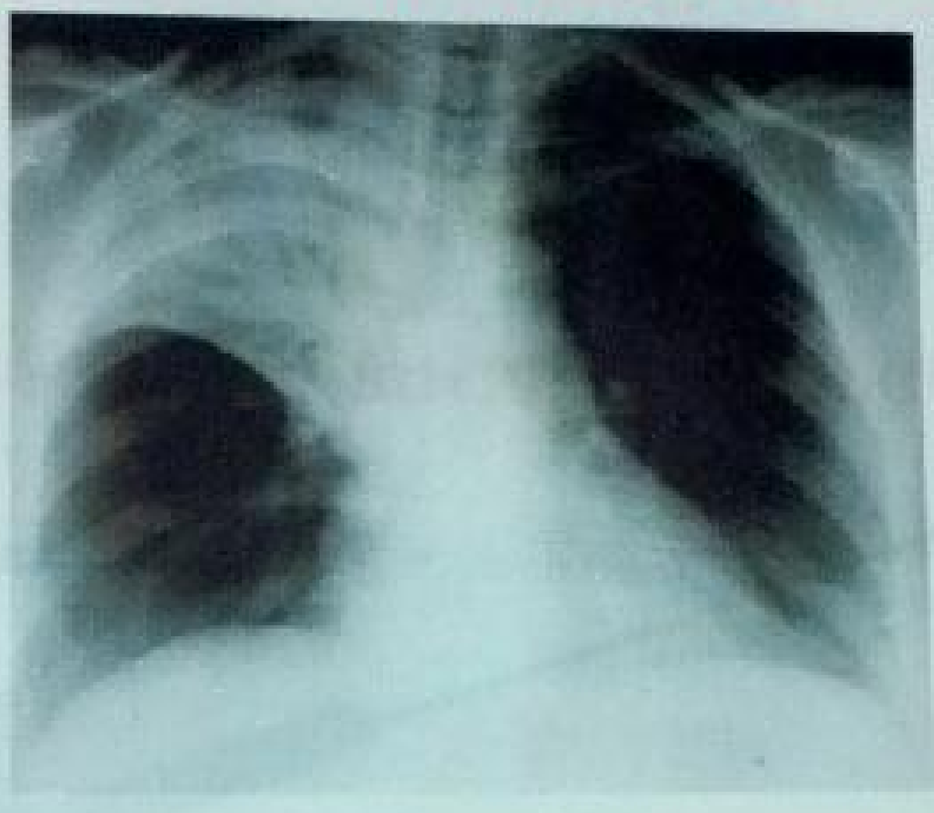
Unobserved Station No. 49

1) Write three indications for the use of this drug.

KEY:

1) a. Antiplatelet
b. Analgesic
c. Antipyretic

Unobserved Station No. 50



1) What is the radiological diagnosis?
1) What will be your findings on auscultation of this patient?

KEY:

1) Right upper lobe consolidation
2) Increased vocal resonance, bronchial breathing

Unobserved Station No. 51

1) Which physical is being shown here?
2) Name two cardiovascular diseases which can lead to this condition?

KEY:

1) Central Cyanosis
2) VSD, ASD, Fallot's tetralogy, CCF

Unobserved Station No. 52

1) What is the diagnosis?

KEY:

1) Ramsay Hunt Syndrome.

Note: 'Lower motor neuron facial palsy' is an incomplete answer.

Unobserved Station No. 53

A 30 year old man is likely to undergo dental extraction. Examination of the pericardium reveals that he has a mid diastolic murmur at the apex.

1) What is the likely valvular lesion?
2) Which antibiotic would you prescribe before dental extraction?

KEY:

1) Mitral stenosis
2) Oral amoxicillin

Unobserved Station No. 54

A 50 year old patient of bronchial asthma is to be started anti hypertensive treatment.

1) Which group of drugs should be avoided and why?

KEY:

1) a. Beta blockers
   b. can cause bronchospasm

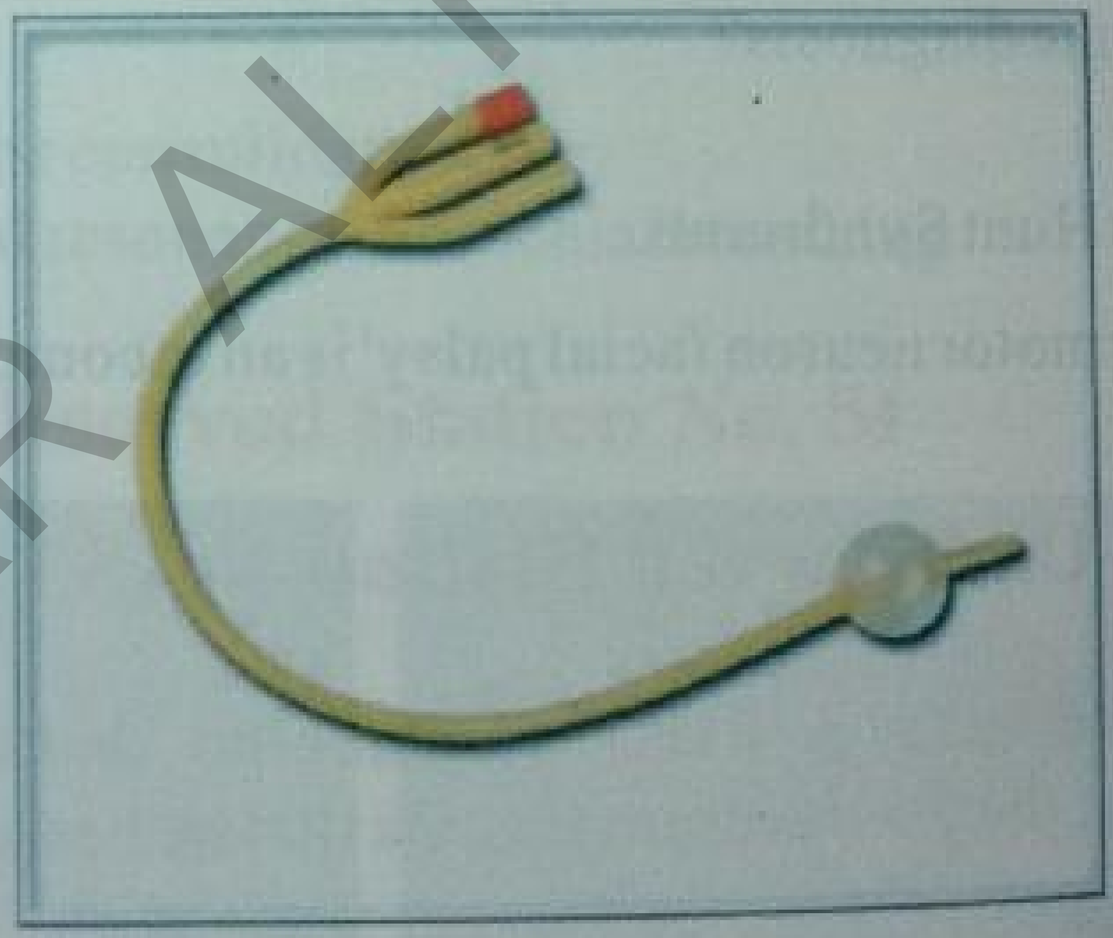
Unobserved Station No. 55

1) A 34 year old business man wants your advice abou vaccination against Hepatitis B. write down the vaccinatio schedule.

KEY:

1) 0, 1, 6 months.

Unobserved Station No. 56

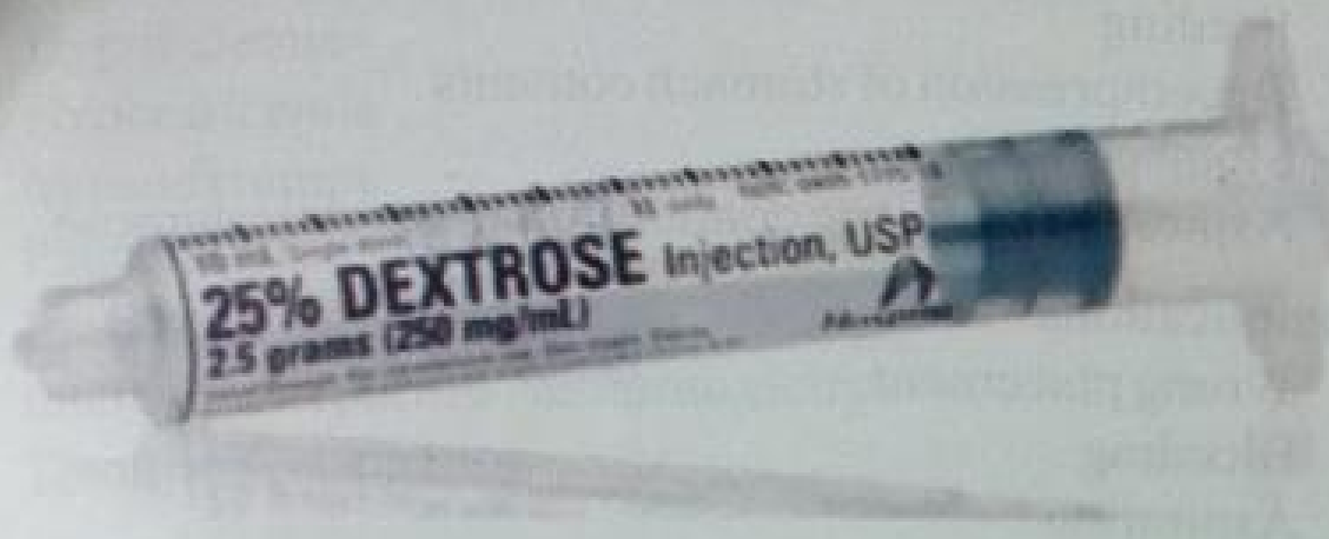


1) Identify the object.
2) Write down two indications for its use.

KEY:

1) Foley's catheter
2) Unconscious patient, urinary retention, paraplegi measure urine output, CVA

Unobserved Station No. 57



This drug was administered to an unconscious patient in the emergency who recovered after a few minutes.

1) What so you think was the diagnosis of the patient?
2) Which other drug can be used as an alternate?

KEY:

1) Hypoglycemia
2) Glucagon

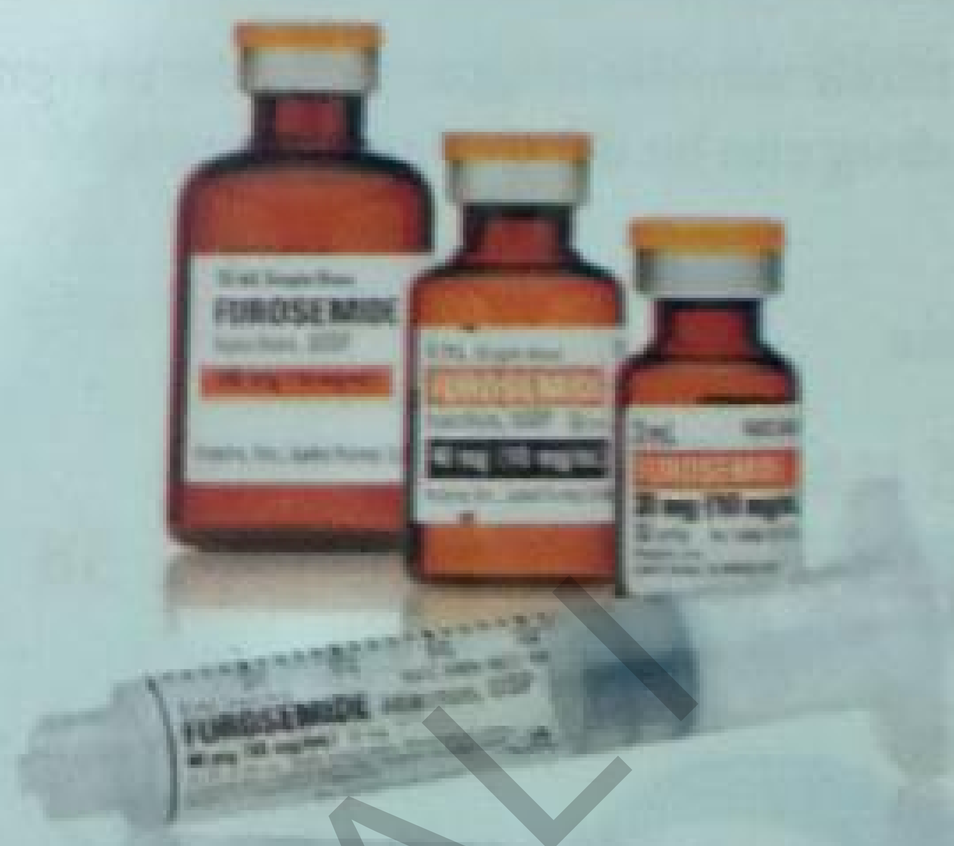
Unobserved Station No. 58

1) Name the object.
2) Write down three indications.
3) Name two complications.

KEY:

1) Nasogastric tube
   2) Indications:
   a. Feeding
   b. Decompression of stomach contents
   c. Stomach wash
   d. Aspiration of gastric contents for diagnostic purpose
3) Complications:
   a. Wrong placement
   b. Bleeding
   c. Aspiration

Unobserved Station No. 59



1) Name the drug and enumerate its three indications.
2) Name four adverse effects.

KEY:

1) Injection Furosemide
   Indications:
   a. Acute cardiogenic pulmonary edema
   b. Congestive cardiac failure
   c. Hepatic cirrhosis with fluid retention
   d. Nephrotic syndrome
   e. Forced diuresis in various poisonings
   f. In non-obstructive oliguric acute renal failure with flu overload

2) Adverse Effects:
   a. Hypovolemia/Hypotension
   b. Hyponatremia
   c. Hypokalemia
   d. Hyperuricemia
   e. Muscle cramps
   f. Pancreatitis
   g. Rashes
   h. Interstitial nephritis/Nephrotoxicity
   i. Tinnitus/hearing loss

Unobserved Station No. 60

3.5 %
Haemaccel
(Poligelina)

1) Give the type of fluid.
2) Give three indications of its use.
3) Tell one contraindication.

1) Colloid.
2) Indications:
   a. Hypovolemic shock
   b. Burns
   c. Assistance in tapping ascites or pleural effusion
3) Congestive Cardiac Failure

Unobserved Station No. 61

A 60 years old chronic smoker is complaining of persistent cough, weight loss and hoarseness of voice for 2 months. Clinical examination reveals clubbing and nicotine staining of fingernails and tracheal shift to the left.

1) What is the most likely diagnosis?
2) What complications has occurred?
3) List three important diagnostic investigations.

KEY:

1) Bronchogenic Carcinoma.
2) Left recurrent laryngeal Nerve infiltration.
3) Investigations:
   a. Chest X-ray
   b. CT scan Chest/mediastinum, brain, abdomen
   c. Histopathology: bronchoscopy and biopsy

Unobserved Station No. 62

A 10 year old girl develops gross haematuria after a sore throat. She h a blood pressure of 170/100 mmHg and 2+ pretibial edema. Seru creatinine is 3.2 mg/dl and urine shows multiple RBC casts.

1) What do you think is the diagnosis of this patient?
2) Enlist three other investigations.

KEY:

1) Glomerulonephritis
2) Investigations:
   a. 24 hrs urine protein
   b. Throat swab
   c. ASO titers
   d. Renal biopsy

Unobserved Station No. 63

A 25 year old male has been brought by his senior colleague with history of locking up his wife at home when leaving house, repeatedly beating his wife at night in order to get confessional statement from her regarding her sexual involvement with two of his colleagues. On psychiactric interview the individual denies having any illness. He believes that his colleagues are ruining his family and appears tense and worried.

1) What is the differential diagnosis?
2) What precautions would you suggest to the attendant of this patient, once patient is on outdoor treatment?

KEY:

1) Differential Diagnosis:
   a. Organic brain disease
   b. Drug induces states
   c. Endocrinopathies
   d. Hypothyroidism
   e. Metabolic disorders e.g. encephalopathy
   f. schizophrenia
   g. mania
   h. delusional disorder
2) Attendant should be clearly explained about the illness, patient's lack of insight and likely consequences. Spouse of the patient should be immediately separated from him until his delusion has cleared up. Attendants should be warned not to take matter lightly and should ensure regular medication to the patient.

Unobserved Station No. 64

A 15 year old boy has shortness of breath on exertion and palpitation. Physical examination reveals parasternal heave and splitting of second heart sound:

The following is the cardiac catheterization of the patient:

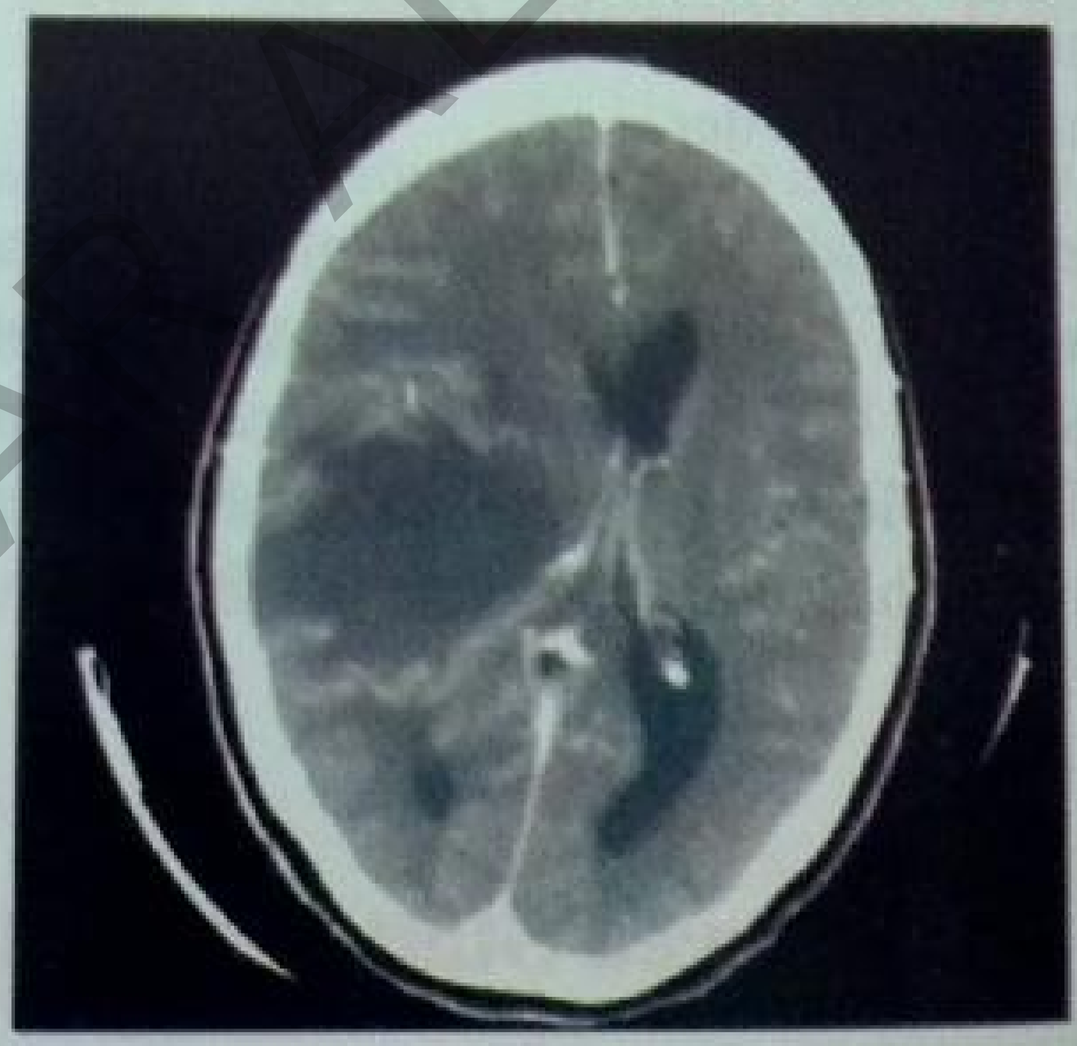
Chamber	Oxygen Saturation (%)
Superior vena cava	69
Inferior vena cava	65
Right atrium	81
Right ventricle	81

1) What is the salient abnormality in this data?
2) What is the diagnosis?
3) What is the most important finding on cardiac auscultation?

KEY:

1) This child has an atrial septal defect (ASD) with a left-to-right shunt. There was a step up in oxygen saturation in the right atrium when oxygen saturation is usually about 65-70% in this chamber.
2) ASD
3) Wide fixed splitting of second heart sound

Unobserved Station No. 65



1) What is this investigation?
2) What is the obvious abnormality seen?
3) List four risk factors of this illness.

KEY:

1) CT scan brain
2) Hypodense area involving left cerebral cortex (parietal region)
3) DM, HTN, Hyperlipidemia, cigarette smoking

Unobserved Station No. 66

35 year old male smoker admitted via emergency department with 3 days history of cough, wheeze and high grade fever.

1) What is the radiological diagnosis?
2) Name four expected signs of chest examination.
3) List two further investigations in this patient.
4) Two modalities in his treatment.

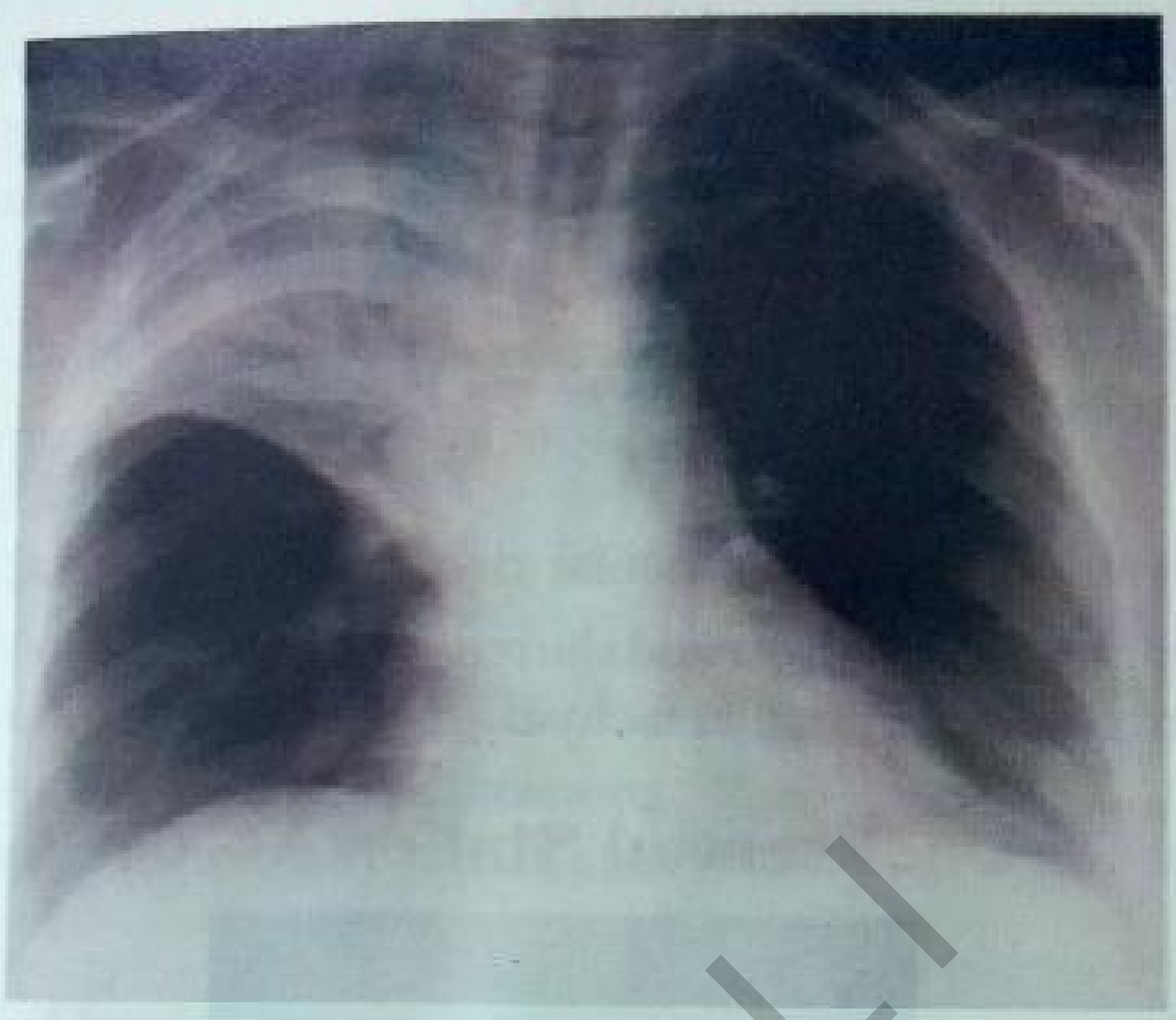
KEY:

1) Right sided consolidation
2) Dull percussion note, vocal fremitus, bronchial breathing sounds, decrease expansion on the affected side
3) CBC, ESR, sputum for staining and culture sensitivity and blood culture
4) Broad spectrum antibiotics and Nebulization with salbutamol etc.

KEY:

1) CT scan brain
2) Hypodense area involving left cerebral cortex (parietal region)
3) DM, HTN, Hyperlipidemia, cigarette smoking

Unobserved Station No. 66



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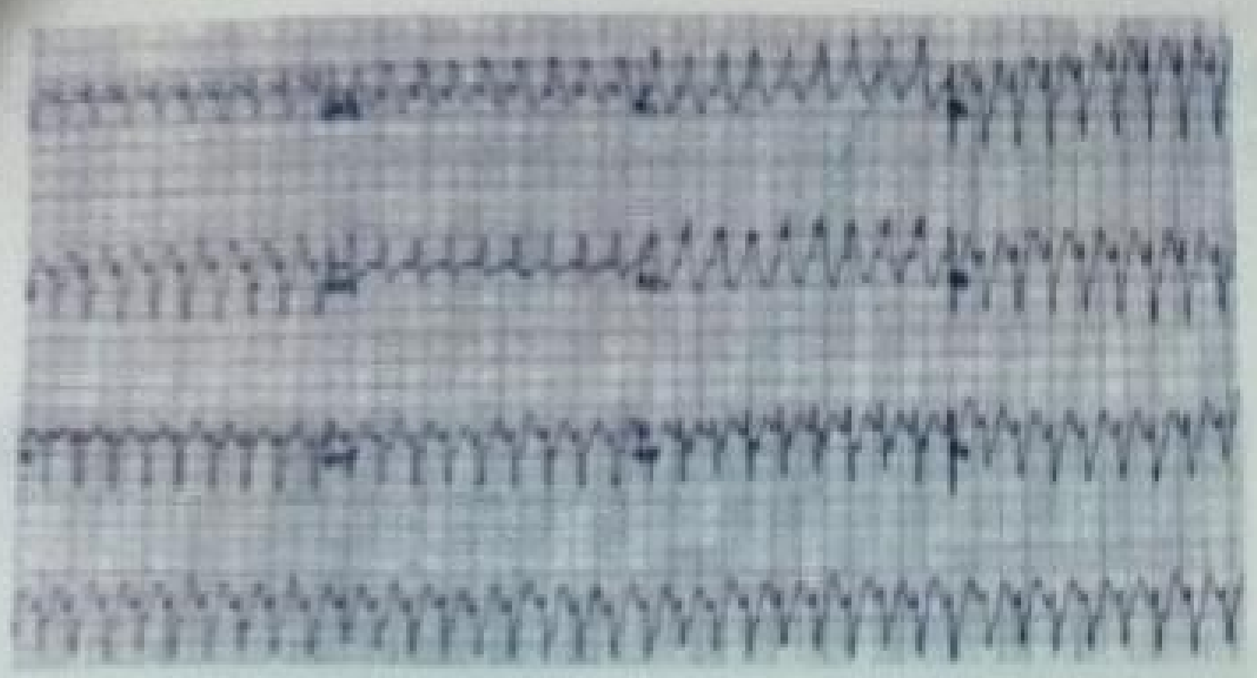
Unobserved Station No. 67



1) What are the findings?
2) What is your interpretation?

KEY:

1) Slightly irregular ventricular rhythm with a rate of 240. QRS complexes are narrow and slurred, upright in V1.
2) Paroxysmal ventricular tachycardia

Unobserved Station No. 68

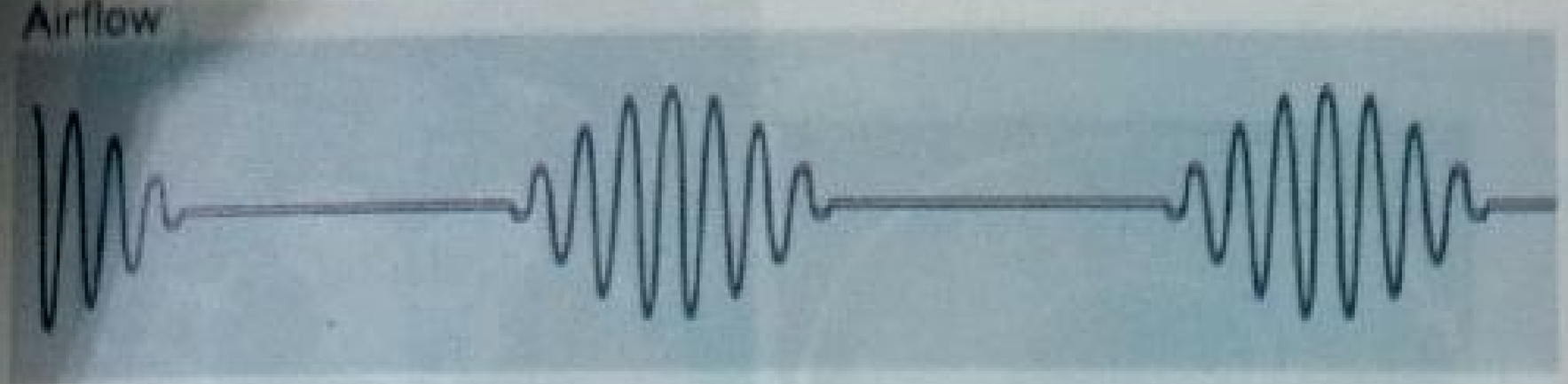
This rash occurred in this young woman complaining of fever and mouth ulcers for six months.

1) What is the underlying condition?
2) Enumerate five symptoms that may be seen in this patient.

KEY:

1) SLE
2) Fever, mouth ulcers, photosensitivity, arthritis, pleuritis, pneumonia, pneumonitis, ascites, alopecia, vasculitis etc. (Any Five)

Unobserved Station No. 69



1) What type of breathing is this?
2) What are the causes of this type of breathing?

KEY:

1) Cheyne-stoke breathing. It is a periodic breathing in which period of tachypnoea alternate with apnoea.
2) Causes:
   a. Left ventricular failure
   b. Uraemia
   c. Brain disease espically SOL
   d. Poisoning with CNS depressants
   e. Sometimes normally seen in elderly

Unobserved Station No. 70

An 18 year old girl was brought to the emergency in an unconscious state. Her blood pH is 7.0, pCO_2 is 20 mmHg, serum HCO_3 is 10 milli eq/L.

1) Enumerate two diagnostic possibilities.
2) Name one investigation helpful in making a diagnosis.

KEY:

1) Any two of following:
   a. DKA
   b. Renal Failure
   c. Lactic acidosis
2) Any one of the following:
   a. Blood sugar level
   b. Urine or blood ketone bodies
   c. Serum creatinine or blood urea

Unobserved Station No. 71

A

B

1) What is this investigation?
2) What are the findings?
3) What is the diagnosis?
4) What are the probable causes?

KEY:

1) MRI of the brain
2) Diffuse dilatation of lateral third and fourth ventricles
3) Communicating hydrocephalus
4) Scarring of basilar meninges in previous meningitis, SAH, he trauma

Unobserved Station No. 72

1) Identify the rash.
2) Enumerate two drugs used in the treatment of this condition

KEY:

1) Herpes zoster
2) Any two of the followings:
   a. Narcotic analgesics and NSAIDS
   b. Carbamazepine tricyclic antidepressents, pregabalin, gabalin acyclovir, gancyclovir etc.

Unobserved Station No. 73

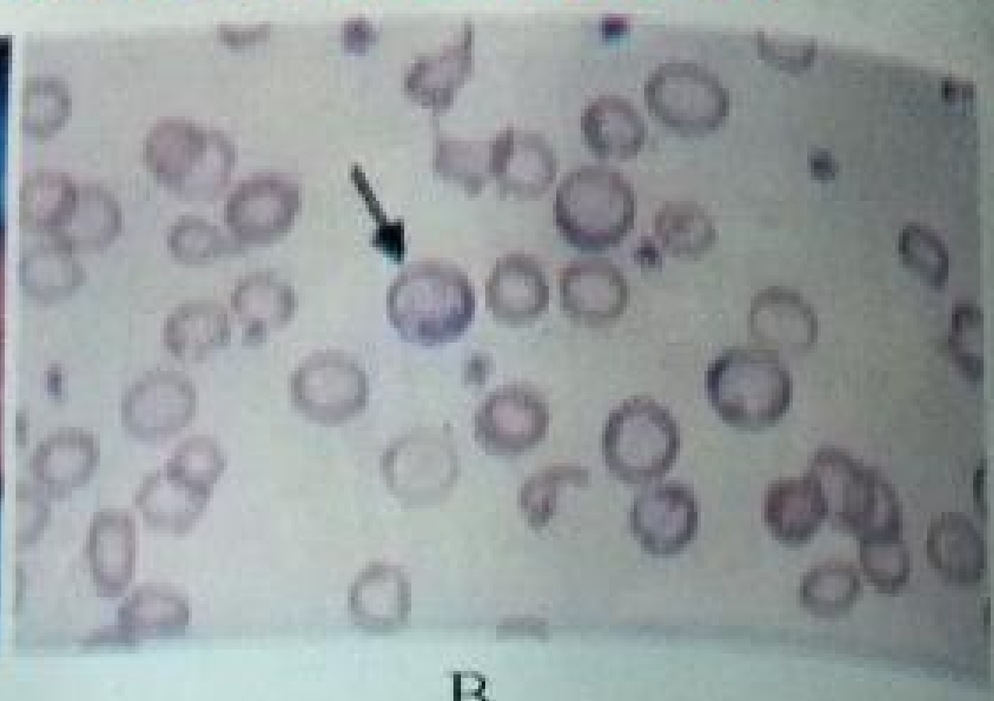
1) What is your interpretation?
2) What physical signs you will get on examination of the chest of this patient?

KEY:

1) Right upper lobe consolidation
2) On
   a. Inspection: Right upper chest moves less with respiration
   b. Palpation: Trachea is central and vocal fremitus is increased
   c. Percussion: Dullness over the right upper chest
   d. Auscultation: Broncheal breath sounds, crepitation may be present, vocal resonance increased

Unobserved Station No. 74

A



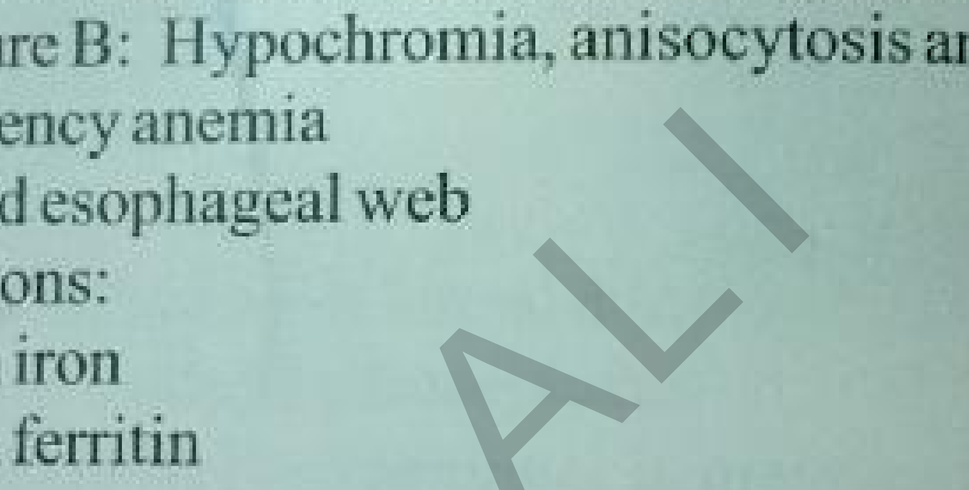
B

1) What abnormality is shown in photograph A and B?
2) What is the most likely haematological diagnosis?
3) What is the reason of difficulty in swallowing?
4) List four relevant investigations in this patient.

KEY:

1) Abnormalities:
   a. Picture A: Koilonychias or spooning of nails
   b. Picuture B: Hypochromia, anisocytosis and poikilocytosis
2) Iron deficiency anemia
3) Post cricoid esophageal web
4) Investigations:
   a. Serum iron
   b. Serum ferritin
   c. TIBC
   d. Stool for occult blood and ova cyst
   e. Upper GI endoscopy

Unobserved Station No. 75



1) What two abnormalities are seen in the eyes of the patient?
2) What is the underlying diagnosis?

KEY:

1) Exophthalmos and lid retraction
2) Graves eye disease in a patient with thyrotoxicosis

Unobserved Station No. 76

1) What is the finding on CXR?
2) Enlist three causes.

KEY:

1) Right sided pleural effusion
2) Causes:
   a. Pneumonia
   b. TB
   c. Bronchogenic carcinoma
   d. Nephrotic syndrome

Unobserved Station No. 76

A 20 year old boy presented with an erythematous, scaly skin rash.

1) What is the diagnosis?
2) Name three treatment options.

KEY:

1) Psoriasis
2) Treatment:
   a. Topical steroids, emollients
   b. PUVA, UVB
   c. Methotrexate, cyclosporine, azathioprine

Unobserved Station No. 78

1) Name the investigation.
2) Tell the finding.
3) Give the diagnosis.

KEY:

1) Plain CT scan of brain
2) Dense opacity in right hemisphere
3) Intra-cerebral bleed with intra-ventricular extension

Unobserved Station No. 79

1) What is the appearance of this tongue called?
2) What are its causes?
3) Which age is common for this problem?

KEY:

1) Strawberry tongue
2) Acute streptococcal scarlet fever by Group A and occasionally group C and G streptococci.
3) Common in school age children, scarlet fever can occur in young adults who have contact with young children.

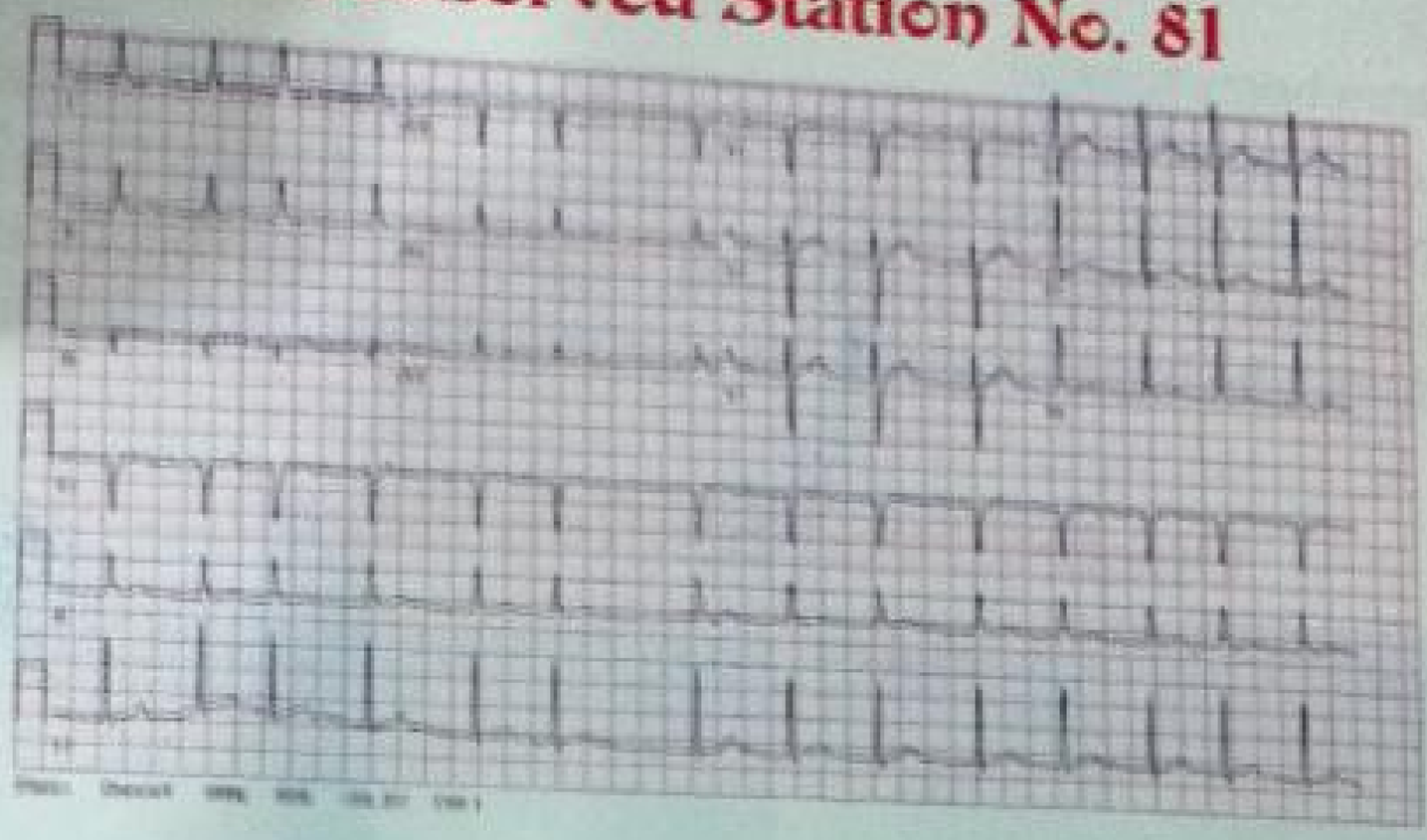
Unobserved Station No. 80

1) What is the radiological abnormality?
2) Name the skin lesion.
3) What is the most likely diagnosis?
4) List four investigations to confirm your most likely diagnosis.

KEY:

1) Bilateral hilar lymphadenopathy
2) Erythema nodosum
3) Sarcoidosis
4) Investigations:
   a. CT chest
   b. CT Scan guided hilar lymph node biopsy
   c. Bronchoscopy with transbrocnhial lung biopsy
   d. Bronchoalveolar lavage
   e. Montoux test
   f. Serum ACE levels
   g. Serum Ca and uric acid levels

Unobserved Station No. 81



1) What is the rhythm called?
2) What may be two abnormalities in examination of radial pulse?
3) Enumerate four causes.

KEY:

1) Atrial fibrillation
2) Irregularly irregular, pulse deficit
3) Any Four:
   a. Mitral stenosis
   b. Thyrotoxicosis
   c. Ischemic heart disease
   d. Drugs (adrenaline, atropine)
   e. Idiopathic
   f. Lung diseases

Unobserved Station No. 82

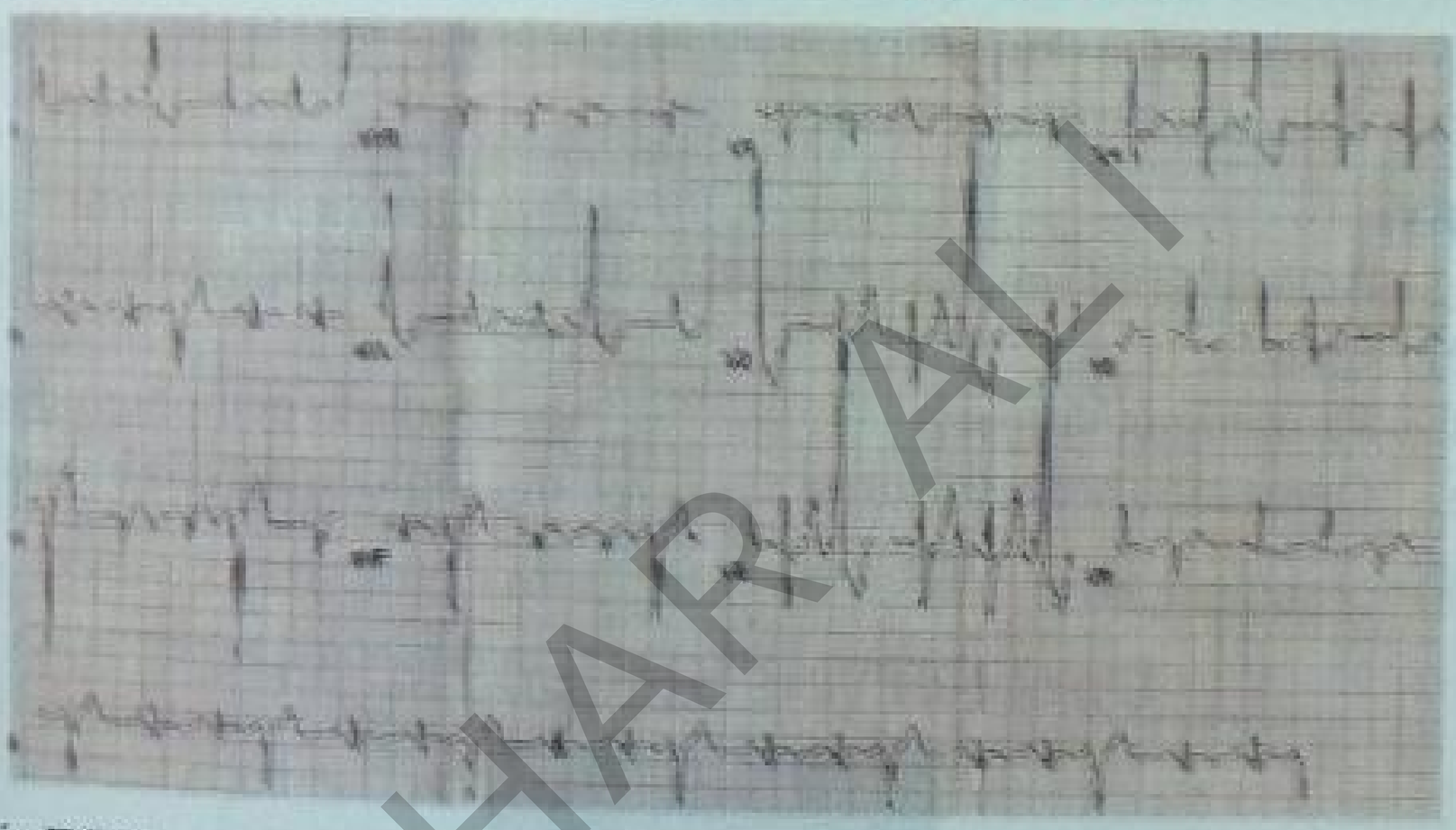
This 60 year old female is complaining of pain in hand joints and morning stiffness.

1) Enumerate any 2 physical signs shown in the picture?
2) What is the likely diagnosis?
3) Name any 4 drugs used for the treatment of this condition?

KEY:

1) Signs:
   a. Wasting of small muscles of hands
   b. Swelling of metacarpophalangeal joints and proximal interphalangeal joints
   c. Ulnar deviation of the hands
2) Rheumatoid arthritis
3) NSAIDs, methotrexate, hydroxychloroquine, steroids, sulphasalazine, gold, penicillamine, TNF, leflunomide

Unobserved Station No. 83



This ECG was recorded from 48 years old man who developed severe chest pain 6 hours earlier.

1) What is the diagnosis?
2) What ECG abnormalities are detected?
3) Mention three immediate steps in the treatment.

KEY:

1) Acute transmural inferolateral myocardial infarction

2) ST elevation and T-wave inversion in inferior leads II, III and AVF and lateral leads V4, V5, V6. Reciprocal ST segment depression in leads aVL and V2.
3) Treatment:
   a. Oxygen inhalation
   b. Inj. Morphine
   c. Thrombolytic therapy

Unobserved Station No. 84

1) Describe the skin lesion.
2) What are the three causes?

KEY:

1) Bullous eruption of varying size with surrounding erythema
2) Causes:

a. Pemphigus Vulgaris
b. Bullous pemphigoid
c. Dermatitis herpetiformis
d. Epidermolysis bullosa

Unobserved Station No. 85

A 40

1) What is your diagnosis?
2) What is the level of bulla on H/P?
3) What is the treatment of choice?

KEY:

1) Pemphigus vulgaris
2) Intraepidermal
3) High doses of steroids alone or with cytotoxic drugs (azathioprine).

Unobserved Station No. 86

A 40 year old male with shortness of breath that started gradually and worsened with time to interfere with his daily activities. He also has dry cough. The picture of his hand is shown.

1) What is your provisional diagnosis?
2) How will you confirm your diagnosis?
3) Name four respiratory diseases that can produce hand picture shown.

KEY:

1) Interstitial lung disease
2) X-ray chest, high resolution CT scan, bronchoscopy with transalveolar biopsy or bronchial lavage
3) Lung cancer, bronchiectasis, pulmonary fibrosis, lung abscess

Unobserved Station No. 87

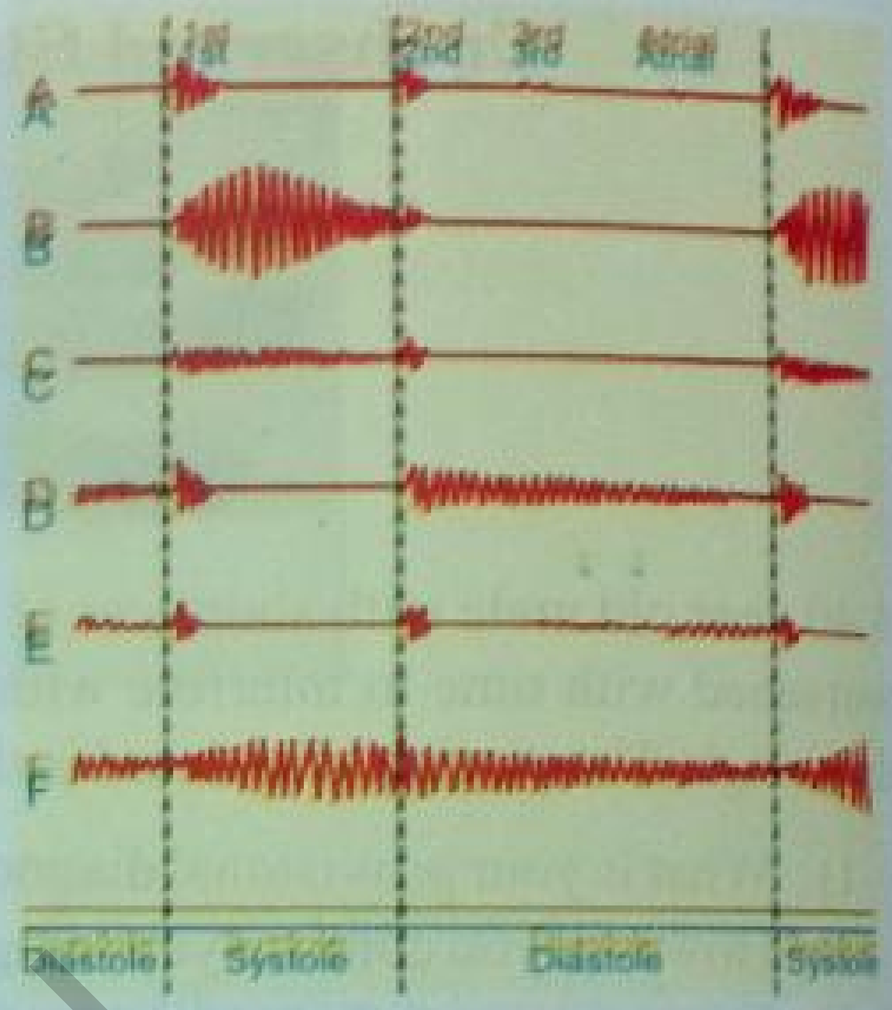
1) Name the sign.
2) Name two disease in which this sign is present.

KEY:

1) Nail pitting
2) Onchomychosis (fungal nail infection), alopecia areata

Unobserved Station No. 88

Look at the following graphical representation of auscultatory findings in heart diseases and give your clinical diagnosis for Each.



KEY:

A. Normal
B. Aortic stenosis
C. Mitral regurgitation
D. Aortic regurgitation
E. Mitral stenosis
F. Patent ductus arteriosus

Unobserved Station No. 89

1) What are the findings?
2) What is the diagnosis?
3) What are its causes?

KEY:

1) Widened QRS complex, left axis deviation, ST depression, inverted T waves and R wave in aVL is 20mm.
2) Left ventricular hypertrophy
3) Systemic arterial hypertension, aortic stenosis, aortic regurgitation.

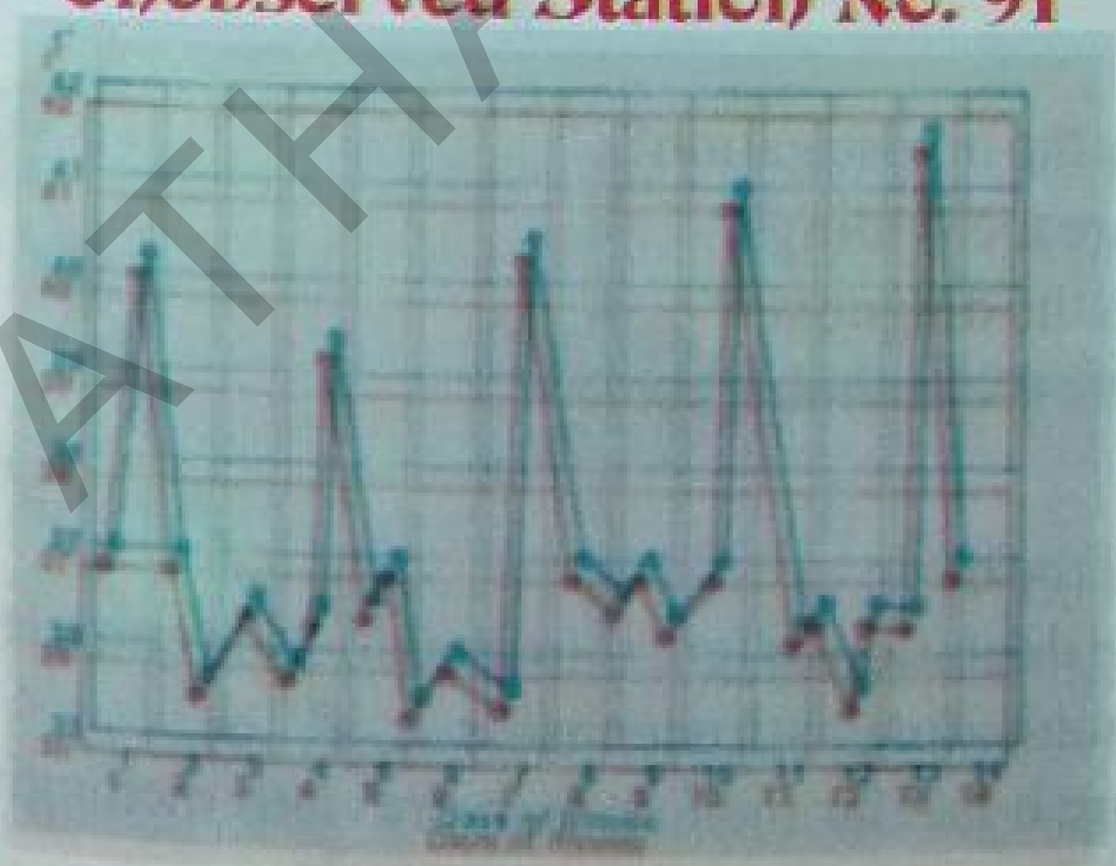
Unobserved Station No. 90

1) What are your findings?
2) What is the diagnosis?
3) What are the management options?

KEY:

1) A homogenous opacity on right side of chest in its mid and lower zones. There is Horizontal upper margin showing fluid level, radiolucent area in left upper Zone. Mediastinum and trachea are shifted to left.
2) Pyopneumothorax or hydropneumothorax.
3) Chest tube drainage with under water seal. Specific indicated treatment.

Unobserved Station No. 91

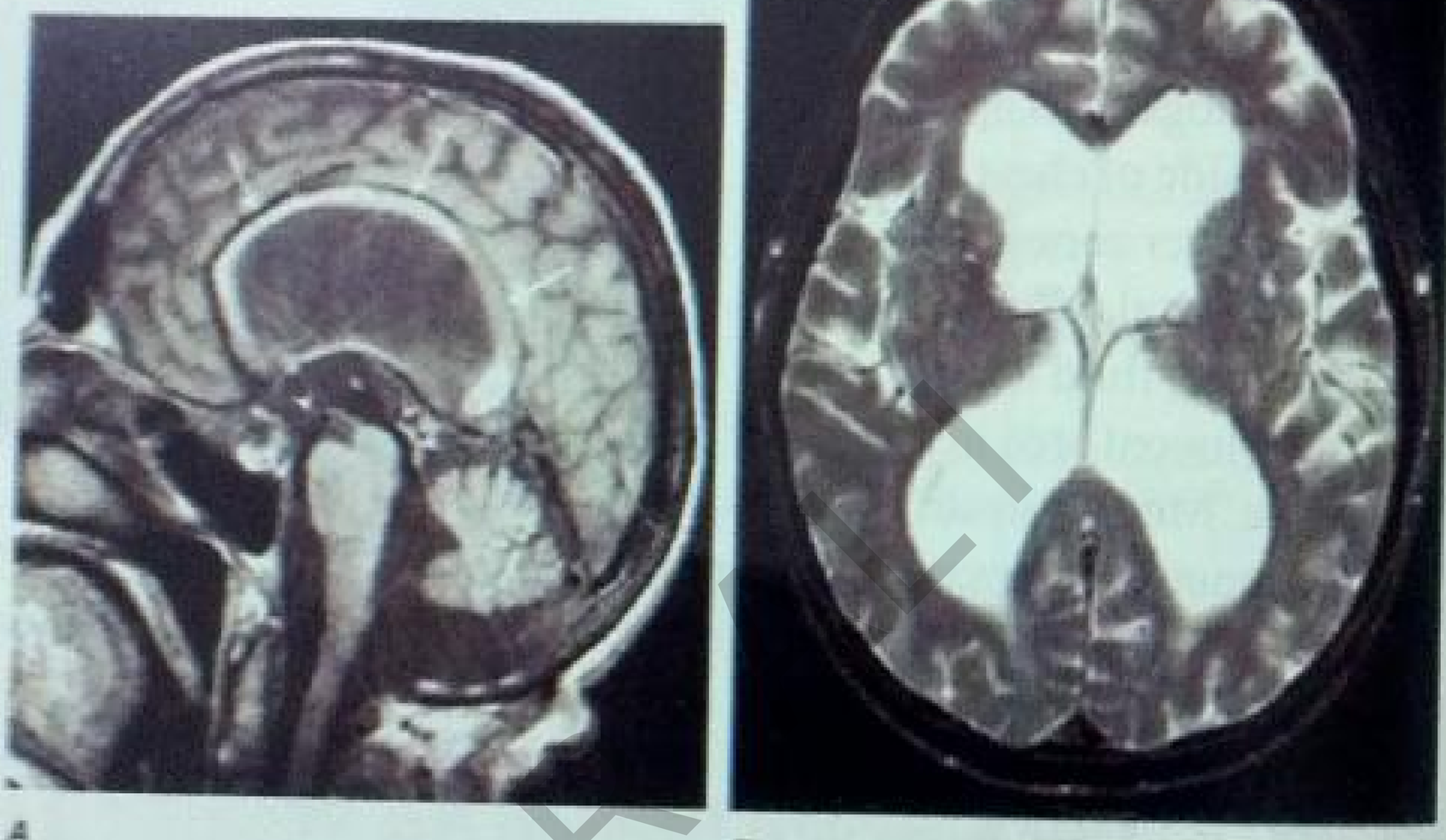


1) How do you interpret this temperature chart?
2) What indications can lead to this type of temperature?

KEY:

1) This is daily intermittent fever. The temperature falls to normal at least once in 24 hours. Various types are:
   a. Tertian fever (fever on alternate days)
   b. Quartan fever (fever recurring every 72 hours)
2) Malaria, septicaemia, continuous fever treated with anitpyretics.

Unobserved Station No. 92



A B

1) What is the investigation?
2) What are the findings?
3) What is the diagnosis?
4) What are the probable causes?

KEY:

1) MRI of the brain
2) Diffuse dilatation of left, third and fourth ventricles
3) Communicating hydrocephalus
4) Scarring o basilar meninges in previous meningitis, SAH, head trauma

Unobserved Station No. 93

1) What is the examination and name of the instrument used?
2) What are your findings?
3) What is your diagnosis?

KEY:

1) Fundoscopy by Ophthalmoscope
2) Silver wire and copper wire arteries, nicking of veins, tortuosity of vessels
3) Arteriosclerotic retinopathy

Unobserved Station No. 94

1) Identify the instrument.
2) What are the indications for its use?
3) What site is commonly selected for the test?

1) Bone marrow biopsy needle
2) To see the morphology of bone marrow and various cell lines, granulomas and infections, secondary malignant invasions
3) Iliac crest, sternum

Unobserved Station No. 94

1) Identify this drug.
2) Indications of its use and route of administration and what are other types used for the same indication.

KEY:

1) Recombinant insulin glargine (a long acting insulin)
2) Management of diabetes mellitus; Subcutaneously
   Ultra short acting
   Short acting
   Intermediate acting
   Biphasic insulins

Unobserved Station No. 96

1) What is seen on this clinical photograph?
2) Her ANF was strongly positive, what two main causes of this appearance should be considered?
3) What investigations should be requested for diagnosis?

KEY:

1) Periorbital oedema
2) Dermatomyositis, nephrotic syndrome due to SLE with glomerulonephritis
3) CPK, Muscle biopsy, DNA binding (anti-DNA antibodies; normal in SLE)

INTER-ACTIVE STATIONS

Interactie Station No - 1

A fourteen year old boy was diagnosed and treated adequately for acute rheumatic fever. His father is worried knowing the nature of disease. How can you counsel.

1) How can initial episode prevented?
2) Is there any chance of recurrence?
3) How can we achieve secondary prevention?

KEY:

1) The initial episode of rheumatic fever can usually be prevented by early treatment of streptococcal pharyngitis
2) Recurrence of rheumatic fever are most common in patients who have had carditis during their initial episode and in children, 20% of whom will have a second episode within 5 years. Recurrence are uncommon after 5 year following the first episode and in patients over 25 years of age.
3) Secondary prevention of rheumatic fever depends on whether carditis has occurred. If there is no evidence for carditis, preventive therapy can be stopped at age 21. If carditis has occurred but no residual valvular disease, it can be stopped at 10 years after the episode. If carditis has occurred with residual valvular involvement, it should be continued for 10 years after the last episode or until age 40 years if the patient is in a situation in which reexposure is expected.
Benzathine penicillin G, 1,2 million units IM every 4 weeks. Penicillin allergies. Erythromycin 250 mg orally twice daily.

Interactie Station No - 2

A HBsAg positive young man has decided to marry. He has a relevant concern of possible transmission of disease. How can you help and advise him?

KEY:

a. Determination of personal status regarding the activity of disease, by determining HBeAg and HBc antibodies, and PCR for HBV-DNA.
   Depending upon the resuts treatment with Lamivudine, Adefovir, Etecavir or interferon may be required before marriage.
b. Full course of vaccination of the spouse with available vaccines Energix etc.
   This is done after determining the status of the spouse.
c. Safe sex recommended till protection achieved.

Interactie Station No - 3

A 25 year old man presented to psychiatry department with sudden onset of behavioural disorder. He complained of listening voice which ordered him to abuse and attack his parents.

1) What is the diagnosis?
2) What is the differential diagnosis?
3) What is the choice of drug?

KEY:

1) Schizophrenia
2) Drug abuse like :
   a. Cocaine
   b. Heroine
   c. Cannabis
   d. Charas
3) Risperidone and other antipsychotics

Interactie Station No - 4

This 45 year old obese man has recently been diagnosed as having type II Diabetes Mellitus. He has been started on a weight reducing diet and on oral hypoglycemic drugs. He is worried about the long term complications related to diabetes which he has read somewhere, and has come to the outpatients to enquire about them.

1) Discuss the long-term chronic complications which can occur in future because of uncontrolled blood sugar levels and how they can be prevented?
2) What are the various groups of oral hypoglycemic drugs?

KEY:

1) Macrovascular complications:
   a. Cerebrovascular disease / stroke
   b. Cardiovascular disease / IHD
   c. Peripheral vascular disease / intermittent claudication, amputation

Microvascular complications:
   a. Retinopathy
   b. Neuropathy
   c. Nephropathy

2. Various groups of oral hypoglycemic drugs:
   (sulphonylureas, biguanides, meglitinides, thiazolidinediones, glucosidase inhibitors)

Interactie Station No - 5

A 25 year old obese male, smoker presents in outpatients with history of headache and successive Blood pressure readings of 160/100 mmHg.

How will you proceed with the patient regarding:
1) Investigations?
2) Management?

Interactie Station No - 4

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   b. Cardiovascular disease / IHD
   c. Peripheral vascular disease / intermittent claudication, amputation

Microvascular complications:

   a. Retinopathy
   b. Neuropathy
   c. Nephropathy

2. Various groups of oral hypoglycemic drugs:
   (sulphonylureas, biguanides, meglitinides, thiazolidinediones, glucosidase inhibitors)

Interactie Station No - 5

A 25 year old obese male, smoker presents in outpatients with history of headache and successive Blood pressure readings of 160/100 mmHg.

How will you proceed with the patient regarding:

1) Investigations?
2) Management?

KEY:

1) Investigations:
   Tests to find secondary cause of HTN
   (Doppler USG for renal artery stenosis, BUN and serum creatinine for renal pathology, urinary metanephrines for phaeochromocytoma , serum electrolyte levels for Conn's syndrome)
   Test to look for target-organ damage and identify risk factors.
   (ECG, fasting lipid profile, urinalysis for blood and protein, blood sugar levels)
2) Management:
   Lifestyle modification
   (weight reduction stopping smoking, dietary salt restriction, exercise)
   Discuss different groups of anti hypertensives specifically use of ACE inhibitors/ARBs in this patient (to exclude B/L renal artery stenosis before starting ACE inhibitors)

Interactie Station No - 6

An 18 year old female is admitted in emergency with 3 months history of weight loss, now presented with acute abdominal pain and vomiting. On examination she appears unwell, dehydrated with a rapid but feeble pulse and BP of 90/60 mmHg. She was hyperventilating. Blood sugar level is 385 mg/dl. Answer the following questions to the examiner

1) What is the most likely diagnosis?
2) What further investigations will you order?
3) How would you manage this patient in emergency?

KEY:

1) Diabetic ketoacidosis
2) Tests
   a. Arterial blood gases.
   B. Urine for ketones

c. Electrolytes

3) Steps
   a. Rehydration with I/V fluids specifically 0.9%, normal saline (4 6L in 1st 24 hours)
   b. Regular insulin via infusion
   c. Correct serum electrolyte accordingly
   d. Correct acidosis if pH below 7.1 and HCO_3 less than 10
   e. I/V antibiotics

Interactie Station No - 7

Your patient is being discharged home on Warfarin for DVT. Patient wants to ask a few questions regarding this drug.

1) Why is this medication prescribed?
2) Are there any special precautions I should follow?
3) What special dietary instructions should I follow?
4) What side effects can this medication cause?

KEY:

1) Warfarin is used to prevent blood clots from forming or growing larger in your blood and blood vessels. It is prescribed for people with certain types of irregular heartbeat, people with prosthetic (replacement or mechanical) heart valves, and people who have suffered a heart attack. Warfarin is also used to treat or prevent venous thrombosis (swelling and blood clot in a vein) and pulmonary embolism (a blood clot in the lung). Warfarin is in a class of medications called anticoagulants ('blood thinners'). It works by decreasing the clotting ability of the blood.
2) Take warfarin at around same time everyday.
   Do not take more or less of it or take it more frequently than prescribed. If you take more than prescribed dose, call the doctor immediately.
   Tell your doctor what prescription and non-prescription medications you are taking. Do not start or stop any medication without talking to your doctor.

If you are having any kind of invasive procedure or surgery, you must tell your doctor that you are taking warfarin.
To monitor the dose of warfarin get your test at regular interval and keep a log of it

3) Eat a normal, healthy diet with the same amount of foods that contain vitamin K; talk to your doctor before making any changes in your diet. Do not eat large amount of leafy, green vegetables or certain vegetable oils such as soybean or canola that contain large amount of vitamin K. Avoid juice or products that contain cranberries.
4) Warfarin may cause bleeding and bruising. If these symptoms are severe or don't go away, tell your doctor.

Interactie Station No - 8

A 25 year old lady had first episode of tonic-clonic fit with tongue bite and urinary incontinence. Her father is very anxious and worried. Counsel the father about illness of his daughter in relation to :

1) Her diagnosis
2) Further investigations
3) General measures
4) Pros and cons of starting drug therapy

KEY:

1) Epilepsy
2) EEG, CT / MRI brain with contrast.
3) Avoid situation that could be dangerous or life threatening if further seizures occur (e.g. driving, swimming, climbing on hills etc.)
4) Examiner's satisfaction

Epilepsy cannot be cured with medication. However, various medicines can prevent seizures. They work by stabilising the electrical activity of the brain. You need to take medication every day to prevent seizures. Seizures are well controlled by medication in about 4 out of 5 cases.

Interactie Station No - 9

A 19 year old boy presented with preogressive generalized muscle rigidity, catatonic posturing and high grade fever that he developed two days ago. Accompanying documents reveal that he has been on fluphenazine and haloperidol for the past two months on account of paranoid schizophrenia.

1) What is your provisional diagnosis?
2) What other symptoms/signs would you look for to confirm the diagnosis?
3) What factors in the history would help you to predict the likelihood of manifestation of this state?
4) What clinical findings and laboratory investigations would confirm the diagnosis?

KEY:

1) Neuroleptic malignant syndrome. It is relatively rare, potentially fatal idiosyncratic reaction to the treatment with antipsychotic drugs.
2) Clinical features: hyperthermia, muscular rigidity, autonomic instability. Associate features include involuntary movements catatonic posturing and altered/fluctuating level of consciousness.
3) Risk/vulnerability factors-include younger patients, concurrent lithium administration and exposure to a wide range of dopamine-receptor blocking or dopamine depleting agents
4) Diagnosis: depends on clinical grounds. CSF and CT scan are normal, EEG shows non-specific slow waves; total leukocyte count and creatinine phosphokinase are elevated

Interactie Station No - 10

An 18 year old female is admitted in emergency with 2 days history of abdominal pain and vomiting. On examination she appears unwell, dehydrated with a rapid but feeble pulse and BP of 90/60 mmHg. Her bedside blood sugar level is 485 mg/dl.

1) What is the most likely diagnosis?
2) What further investigations will you order?
3) How would you manage this patient in emergency?

KEY:

1) Diabetic ketoacidosis
2) Tests
   d. Arterial blood gases.
   e. Urine for ketones
   f. Electrolytes
3) Steps
   f. Rehydration with I/V fluids specifically 0.9%, normal saline (4 - 6L in 1st 24 hours)
   g. Regular insulin via infusion
   h. Correct serum electrolyte accordingly
   i. Correct acidosis if pH below 7.1 and HCO_3 less than 10
   j. I/V antibiotics

Interactie Station No - 11

A 50 year old patient diagnosed with chronic liver disease secondary to hepatitis C is admitted in emergency department in a state of shock following massive haematemisis.

How would you proceed to manage this patient.

KEY:

1) Maintain I/V line
2) Pass nasogastric tube
3) I/V plasma expanders/fluids.
4) Blood transfusion
5) I/V terlipressin or
6) I/V octreotide infusion
7) I/V omerprazole
8) Emergency endoscopy with band ligation / injection sclerotherapy
9) Sangstaken tube if endoscopy is unsuccessful or not available

LIST OF INSTRUMENTS USED IN GENERAL MEDICINE

Instrument	Uses
Stethoscope	used to hear sounds from movements within the body, like heart beats, intestinal movement, breath sounds, etc.
Reflex testing hammer (padded)	to test motor reflexs of the body
Sphygmomanometer (Blood pressure meter)	to record the patient's blood pressure
A thin beam electric torch	to see into the eye, body's natural orifices, etc., and to test for pupillary light reflex, etc.
A watch / stopwatch	used in recording rates like heart rate, respiratory rate, etc.; for certain tests of hearing
A measuring tape	for size measurements
A weighing machine	to record the weight
Tuning forks	to test for deafness and to categorize it
Kidney dish	as a tray for instruments, gauze, tissue, etc.
Bedpan	for patients who are unconscious or too weak to even sit up of walk to the toilet to defecate
Thermometer	to record the body temperature
Gas cylinders	supply of oxygen, nitrous oxide, carbon dioxide, etc.
Oxygen mask or tubes	delivering gases up to the nostrils to assist in oxygen intake or to administer aerosolized or gaseous drugs
Vaporizer	to produce vapors

Instrument sterilizers	Used to sterilize instruments in absence of an autoclave
Dressing drums	storage of gowns, cotton, linen, etc.
Nebulizer	to produce aerosols of drugs to be administered by respiratory route
Positive pressure ventilator	to assist or carry out the mechanical act of inspiration and expiration so that the patient who can not respire on his / her own may respire; it is a component of "life support"
Cardioverter / Defibrillator	to correct arrhythmias of the heart or to start up a heart that is not beating
Dialyser	to remove toxic materials from the blood that are generally removed by the kidneys; used in case of renal failure
Rubber catheter	to drain and collect urine directly from the bladder (primary use); also to act as a makeshift oxygen tube. etc.
Syringe of different sizes and needles	for injections and aspiration of blood or fluid from the body
Canula	a kind of a needle that is used to create a permanent pathway to a vein (or artery) for the purpose of repeated injections or infusion of intravenous fluids
Transfusion sets	used to transfuse blood and blood products
Sucker	for sucking up blood or secretions)
Gastrointestinal tubes[1]	
•Nasogastric tube	used for nasogastric suction (or at times introduction of food or drugs). *vide link*
•Stomach tube	-do-
•Levin's tube	-do-

•Kehr's "T" tube	-do-
•Infant feeding tube	-do-; for infants
Spectacles	for protection of the eyes or for refractive error correction
Enema set	to passively evacuate the rectum of faeces; *vide link*
Bandage	to cover and protect certain areas of the body such as recent injury
Pipettes or droppers	to measure out doses of liquid, specially in children
Graduated spoons	to measure out doses of liquids
Ophthalmoscope	to look at the retina
Otoscope	to look into the external ear cavity
Endoscope	to look inside the oesophagus, stomach, upper intestines, bile duct, larynx, trachea, bronchi-through the mouth; anal canal, rectum, colon-through anus; used mainly in Surgery or by surgical consultants
Proctoscope	to look inside anal canal and lower part of the rectum
Linen	for dressing and draping
Beds, bottle stands, etc.	
Gauze, cotton, antiseptics, glovesetc.	

GALLERY OF SOME COMMONLY USED INSTRUMENTS IN GENERAL MEDICINE

Clinical mercury manometer

Stethoscope

Tuning fork

Reflex hammer

Queen square reflex hammer

Mercury thermometers

Weight scale

Reflex hammer

Queen square reflex hammer

Mercury thermometers

Weight scale

Kidney dish

Bedpan

Cylinder of oxygen

Nebulizer

High frequency ventilator

Defibrillator

Hemodialysis machine

Syringe and needle

Foley catheter

Intravenous cannula

Intravenous cannula (parts)

Blood infusion set

Spectacles

Enema bulb

Enema set

Bandage

Endoscope

Ophthalmoscope

INSTRUMENTS COMMONLY ASKED IN OSPE

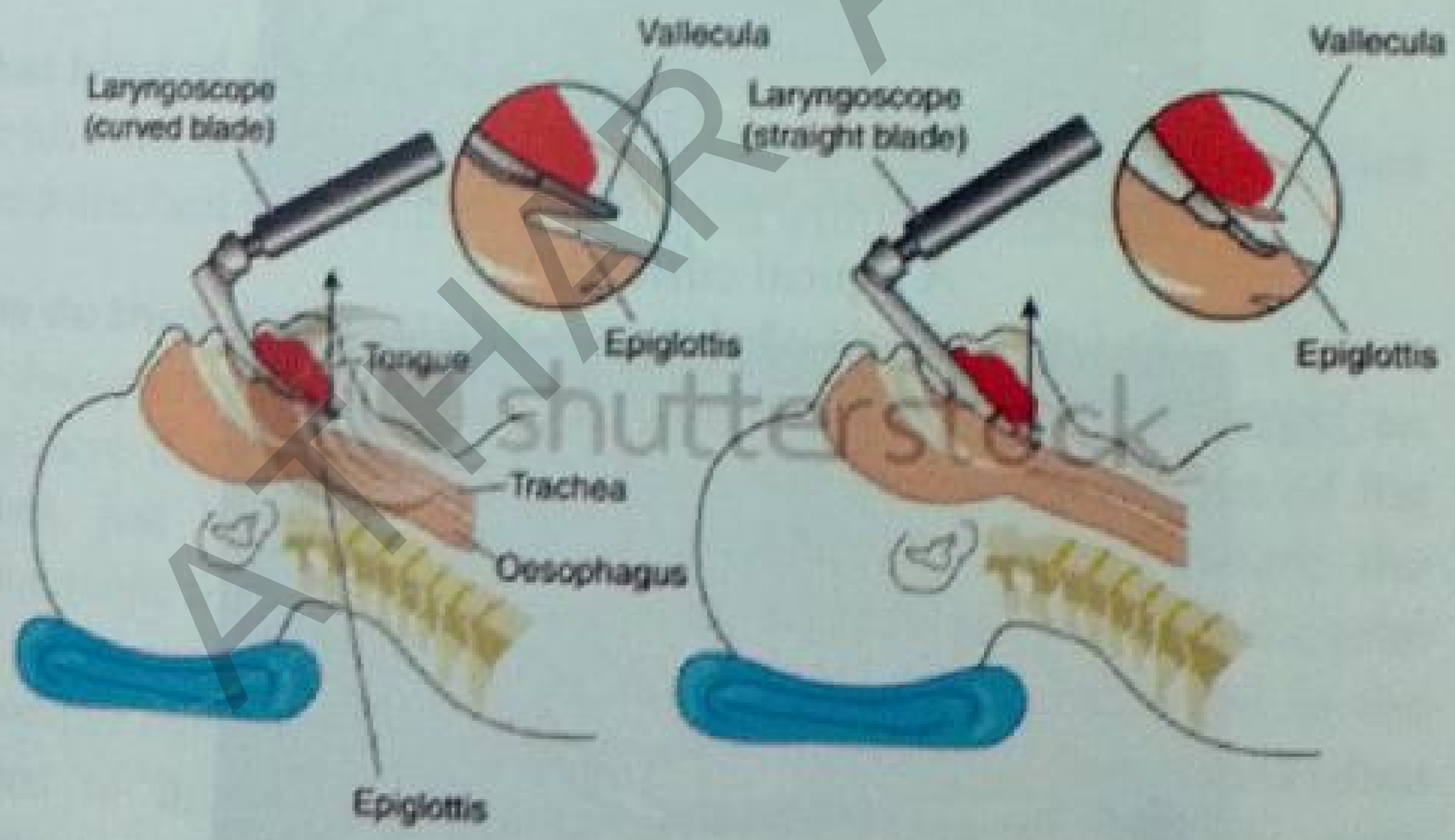
The laryngoscope is a medical devices that allows doctors to examine a patient's larynx, also known as the voice box. The device helps both with diagnosis and treatment of diseases of the larynx.

PARTS:

A laryngoscope has a handle and a smooth, lighted tube, also called a blade. The handle contains a battery pack that supplies power to a light source inside the blade, which can be straight or curved, rigid or flexible.

PROCEDURE:

The doctor inserts the blade into the patient's upper airway. The light allows the doctor to examine the larynx and the glottis, the space where the vocal cords are located.



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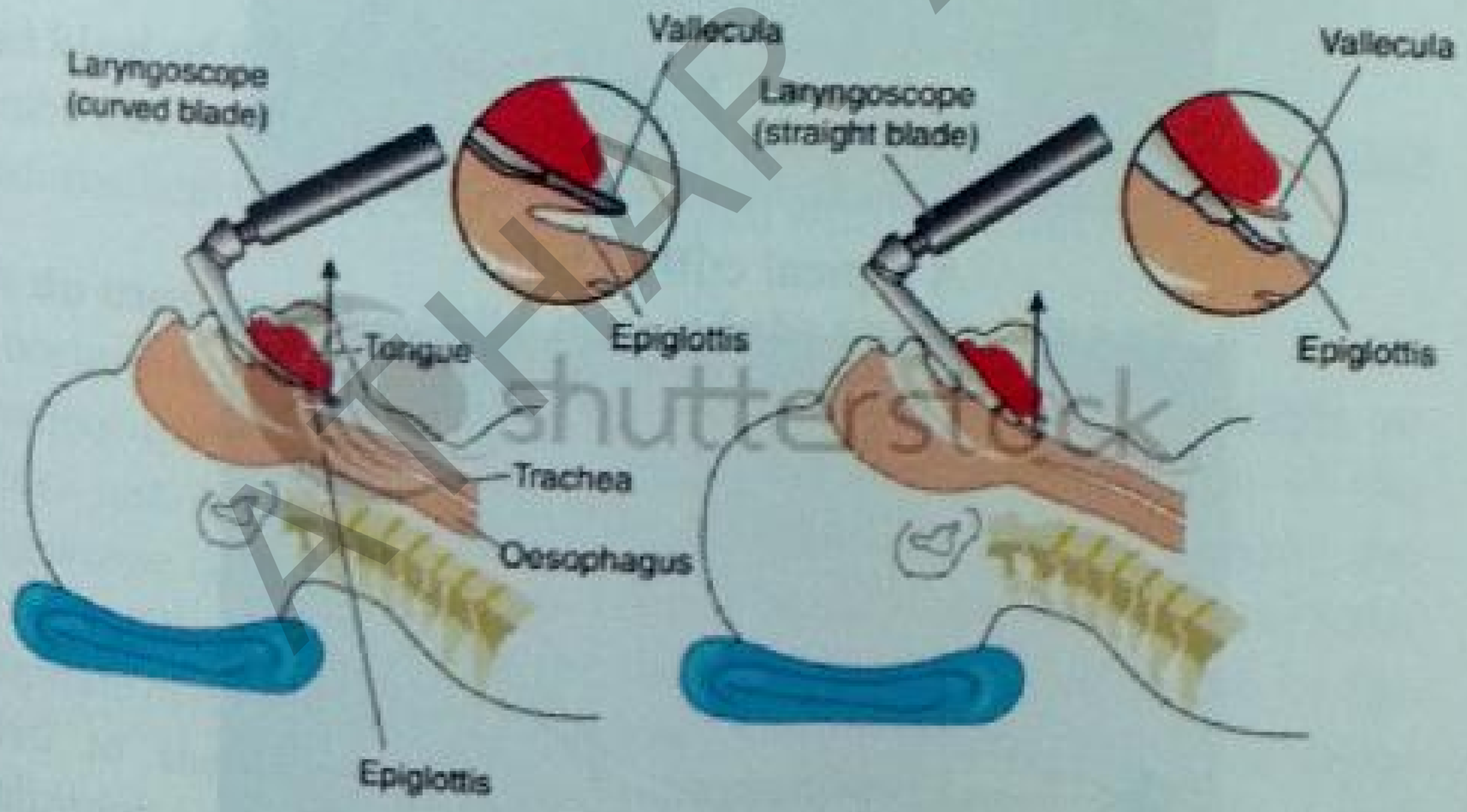


INDICATIONS

- Helps in intubation during the administration of general anaesthesia or for mechanical ventilation.
- Detects causes of voice problems, such as breathing voice, hoarse voice, weak voice, or no voice.
- Detects causes of throat and ear pain.
- Evaluates difficulty in swallowing : a persistent sensation of lump in the throat, or mucous with blood.
- Detects strictures or injury to the throat, or obstructive masses in the airway.

CONTRAINDICATIONS:

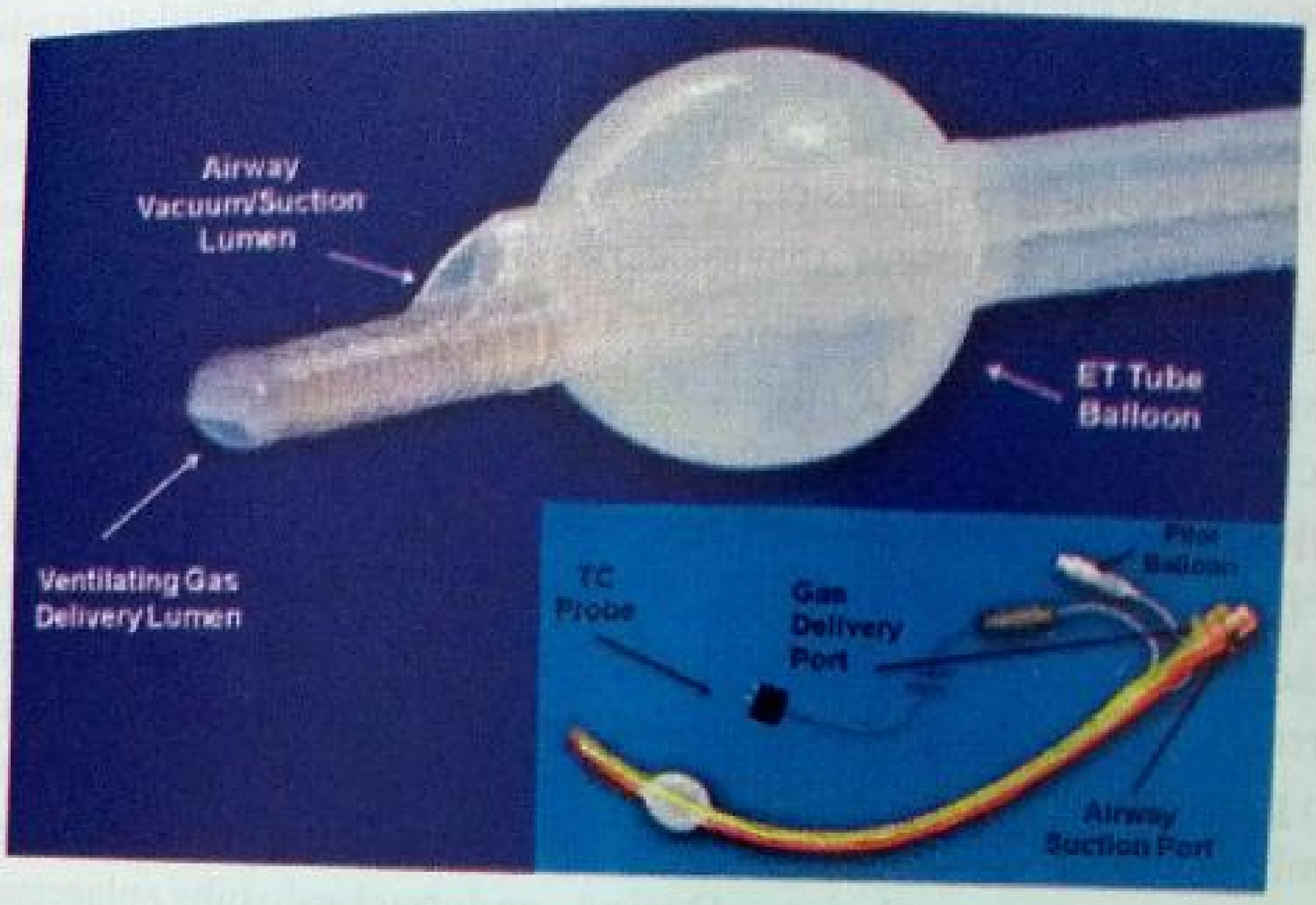
No absolute contraindications, may be contraindicated in patients who require mechanical ventilation or intubation.

COMPLICATIONS:

Cases of mild or severe injury caused by rough and inexperienced use of laryngoscopes have been reported. These include minor damage to the soft tissues within the throat which causes a sore throat after the operation to major injuries to the larynx and pharynx causing permanent scarring, ulceration and abscesses if left untreated

A typical cuffed ETT

A Carlens double-lumen endotracheal tube, commonly used for thoracic surgical operations such as VATS lobectomy.



What is endotracheal intubation?

Endotracheal intubation is a procedure by which a tube is inserted through the mouth down into the trachea (the large airway from the mouth to the lungs). Before surgery, this is often done under deep sedation. In emergency situations, the patient is often unconscious at the time of this procedure.

What kind of tube is used?

The tube that is used today is usually a flexible plastic tube. It is called an endotracheal tube because it is slipped within the trachea.

How do they put the tube down into the trachea?

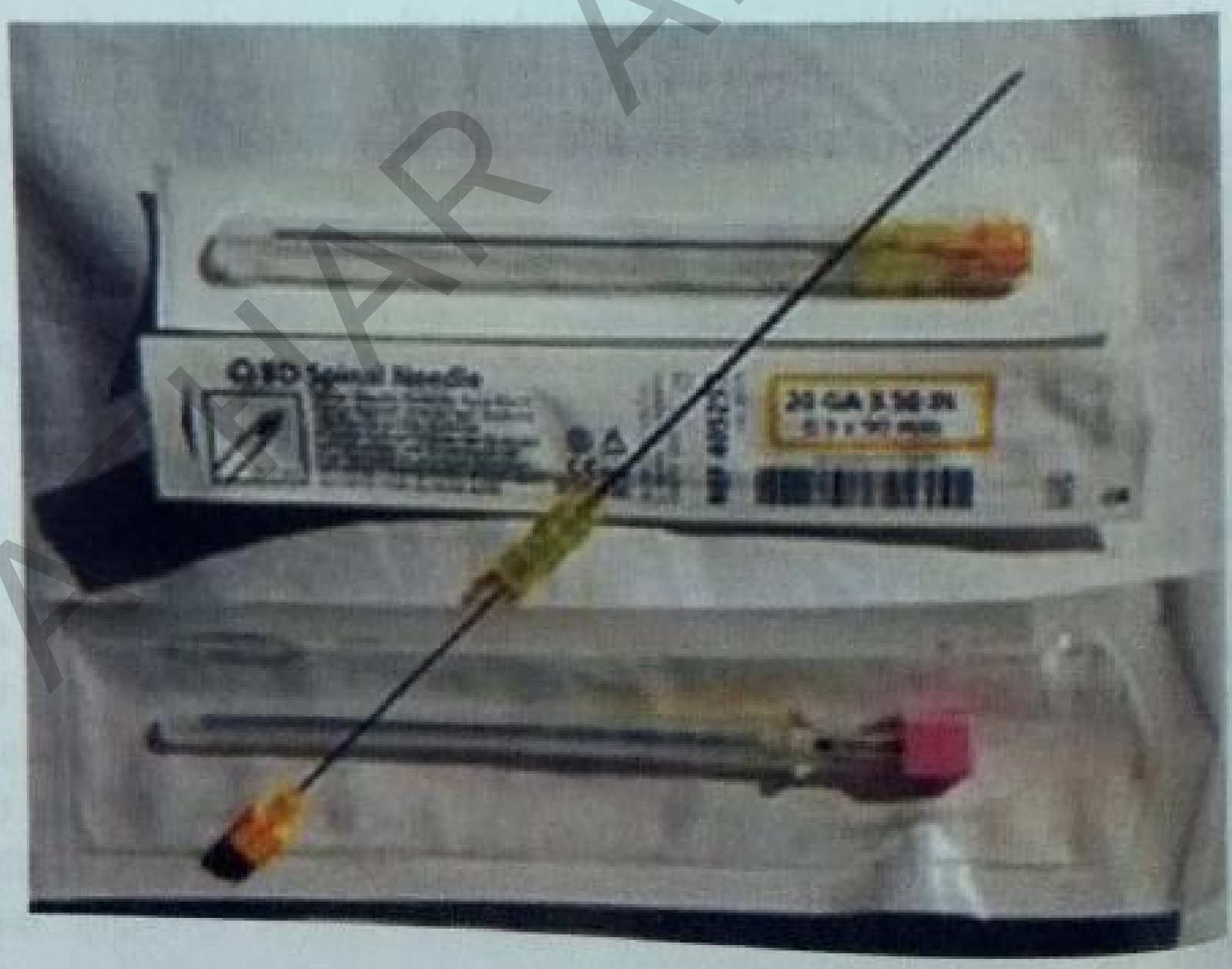
The doctor often inserts the tube with the help of a laryngoscope, an instrument that permits the doctor to see the upper portion of the trachea, just below the vocal cords. During the procedure the laryngoscope is used to hold the tongue aside while inserting the tube into the trachea. It is important that the head be positioned in the appropriate manner to allow for proper visualization. Pressure is often applied to the thyroid cartilage (Adam's apple) to help with visualization and prevent possible aspiration of stomach contents.

What is the purpose of endotracheal intubation?

The endotracheal tube serves as an open passage through the upper airway. The purpose of endotracheal intubation is to permit air to pass freely to and from the lungs in order to ventilate the lungs. Endotracheal tubes can be connected to ventilator machines to provide artificial respiration. This can help when a patient is unconscious and by maintaining a patent airway, especially during surgery. It is often used when patients are critically ill and cannot maintain adequate respiratory function to meet their needs. The endotracheal tube facilitates the use of a mechanical ventilator in these critical situations.

What are the complications of endotracheal intubation?

If the tube is inadvertently placed in the esophagus (right behind the trachea), adequate respirations will not occur. Brain damage, cardiac arrest, and death can occur. Aspiration of stomach contents can result in pneumonia and ARDS. Placement of the tube too deep can result in only one lung being ventilated and can result in a pneumothorax as well as inadequate ventilation. During endotracheal tube placement, damage can also occur to the teeth, the soft tissues in the back of the throat, as well as the vocal cords.



Spinal needles used in lumbar puncture.

A lumbar puncture (or **LP**, and colloquially known as a **spinal tap**) is a **diagnostic** and at times **therapeutic** procedure that is performed in order to collect a sample of **cerebrospinal fluid** (CSF) for **biochemical**, **microbiological**, and **cytological** analysis, or very rarely as a treatment ("therapeutic lumbar puncture") to relieve increased intracranial pressure.

INDICATIONS:

DIAGNOSTIC:

1. Signs of meningeal irritation with or without fever (meningitis, subarachnoid hemorrhage)
2. Fever with disturbed consciousness.
3. Unexplained coma
4. G.B Syndrome
5. Acoustic neuroma
6. Multiple sclerosis
7. Transverse myelitis
8. Myelography

THERAPEUTIC:

1. Spinal Anesthesia
2. Intrathecal methotrexate in Acute lymphoblastic leukemia

CONTRAINDICATIONS:

1. Papilledema
2. Local Sepsis
3. Hypotension
4. Bleedind/clotting disorders

COMPLICATIONS:

1. Introduction of infection
2. Transtentorial or tonsillar herniation
3. Low pressure Headache

PROCEDURE:

In performing a lumbar puncture, first the patient is usually placed in a left (or right) lateral position with his/her neck bent in full flexion and knees bent in full flexion up to his/her chest, approximating a fetal position as much as possible. It is also possible to have the patient sit on a stool and bend his/her head and shoulders forward. The area around the lower back is prepared using aseptic technique. Once the appropriate location is palpated, local anaesthetic is infiltrated under the skin and then injected along the intended path of the spinal needle. A spinal needle is inserted between the lumbar vertebrae L3/L4 or L4/L5 and pushed in until there is a "give" that indicates the needle is past the ligamentum flavum. The needle is again pushed until there is a second 'give' that indicates the needle is now past the dura mater. Since the arachnoid membrane and the dura mater exist in flush contact with one another in the living person's spine (due to fluid pressure from CSF in the subarachnoid space pushing the arachnoid membrane out towards the dura), once the needle has pierced the dura mater it has also traversed the thinner arachnoid membrane and is now in the subarachnoid space. The stylet from the spinal needle is then withdrawn and drops of cerebrospinal fluid are collected. The opening pressure of the cerebrospinal fluid may be taken during this collection by using a simple column manometer. The procedure is ended by withdrawing the needle while placing pressure on the puncture site. In the past, the patient would often be asked to lie on his/her back for at least six hours and be monitored for signs of neurological problems, though there is no scientific evidence that this provides any benefit. The technique described is almost identical to that used in spinal anesthesia, except that spinal anesthesia is more often done with the patient in a seated position.

The upright seated position is advantageous in that there is less distortion of spinal anatomy which allows for easier withdrawal of fluid. It is preferred by some practitioners when a lumbar puncture is performed on an obese patient where having them lie on their side

would cause a scoliosis and unreliable anatomical landmarks. On the other hand, opening pressures are notoriously unreliable when measured on a seated patient and therefore the left or right lateral (lying down) position is preferred if an opening pressure needs to be measured.

Patient anxiety during the procedure can lead to increased CSF pressure, especially if the person holds their breath, tenses their muscles or flexes their knees too tightly against their chest. Diagnostic analysis of changes in fluid pressure during lumbar puncture procedures requires attention both to the patient's condition during the procedure and to their medical history.[clarification needed] Reinsertion of the stylet may decrease the rate of post lumbar puncture headaches.

Stomach Tube or Naso Gastric(N-G) Tube

INDICATIONS:

1. Decompression of stomach
2. Decompression of small bowel
3. Administration of medications
4. Enteral nutrition
5. Gastric lavage

Contraindications

The use of nasogastric intubation is contraindicated in patients with base of skull fractures, severe facial fractures especially to the nose and obstructed esophagus, esophageal varices, and/or obstructed airway. The use of an NG tube is also contraindicated in patients who have had gastric bypass surgery.

Complications

Minor complications include nose bleeds, sinusitis, and a sore throat.

Sometimes more significant complications occur including erosion of the nose where the tube is anchored, esophageal perforation, pulmonary aspiration, a collapsed lung, or intracranial placement of the tube.

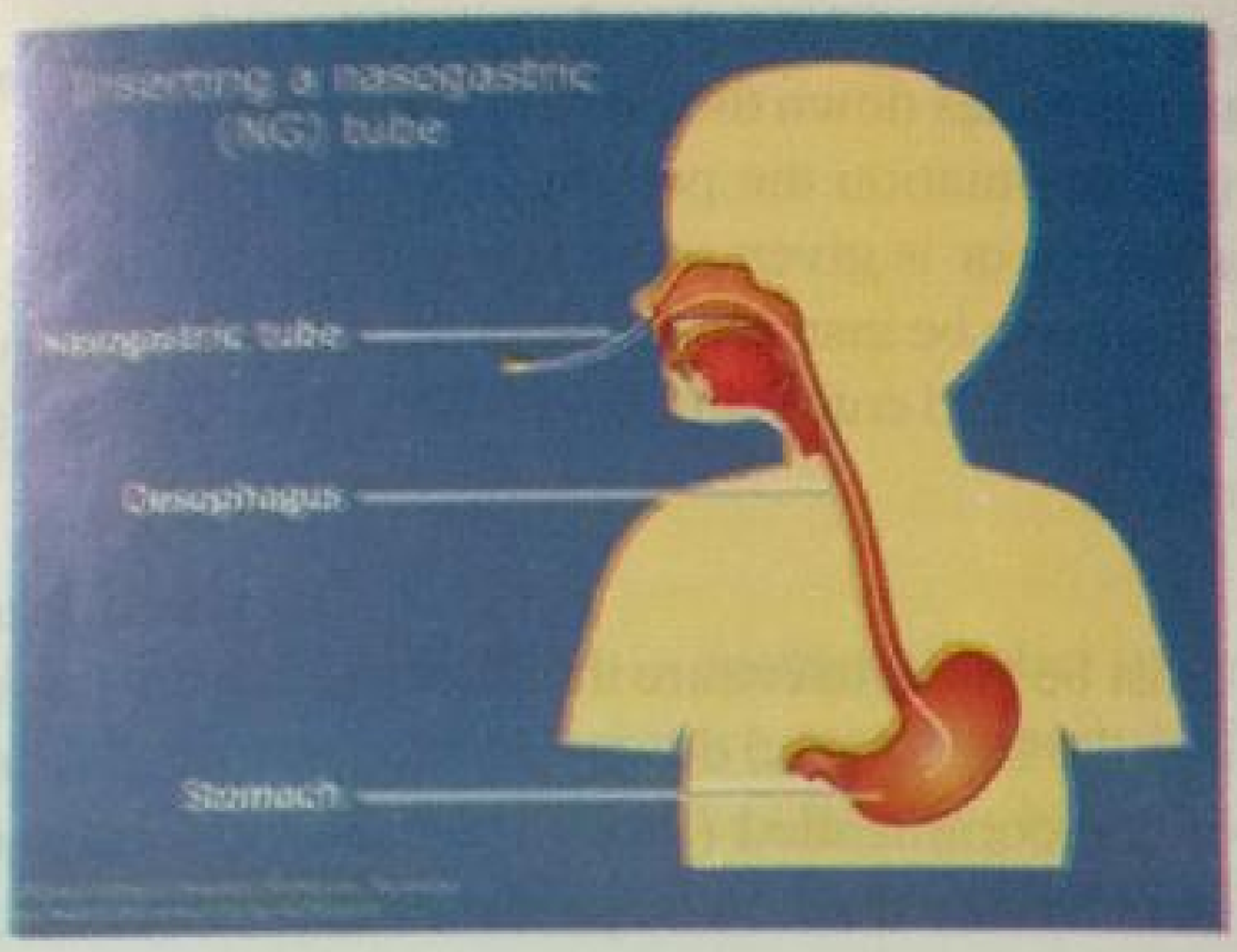
Technique

Before an NG tube is inserted the health care provider must measure with the tube from the tip of the patient's nose to their ear and down to the xyphoid process. Then the tube is marked at this level to ensure that the tube has been inserted far enough into the patient's stomach. Many commercially available stomach and duodenal tubes have several standard depth markings, for example 18" (46 cm), 22" (56 cm), 26" (66 cm) and 30" (76 cm) from distal end; infant feeding tubes often come with 1 cm depth markings. The end of a plastic tube is lubricated (local anesthetic such as 2% xylocaine gel, may be used; in addition, nasal vasoconstrictor spray may be applied before the insertion) and inserted into one of the patient's anterior nares. The tube should be directed aiming down and back as it is moved through the

Nasal cavity and down into the throat. When the tube enters the **oropharynx** and glides down the posterior pharyngeal wall, the patient may gag; in this situation the patient, if awake and alert, is asked to mimic swallowing or is given some water to sip through a straw, and the tube continues to be inserted as the patient swallows. Once the tube is past the **pharynx** and enters the **esophagus**, it is easily inserted down into the stomach.

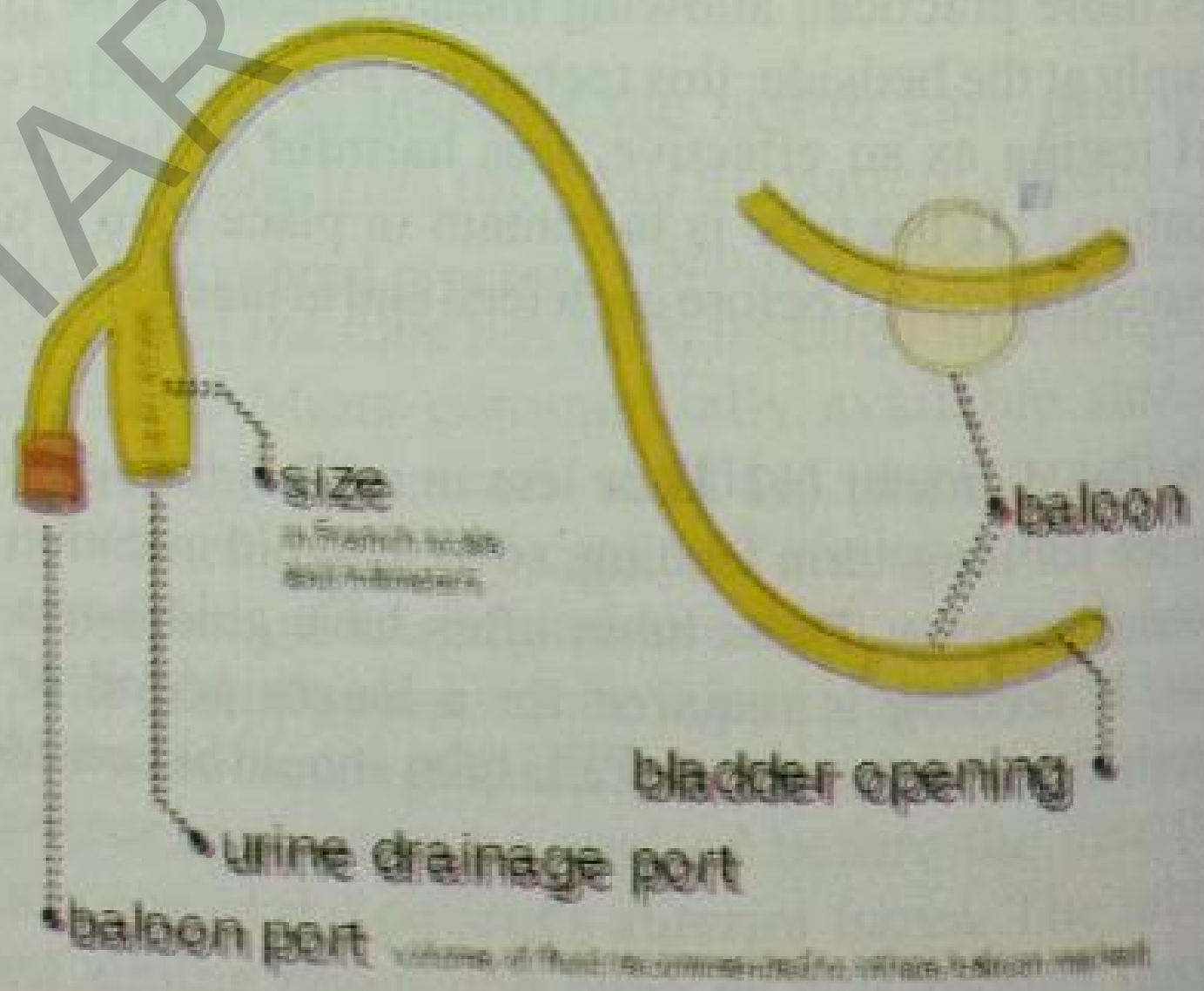
Great care must be taken to ensure that the tube has not passed through the **larynx** into the **trachea** and down into the **bronchi**. To ensure proper placement it is recommended (though not unequivocally confirmed) that injection of air into the tube be performed,[1] if the air is heard in the stomach with a stethoscope, then the tube is in the correct position. Another more reliable method is to aspirate some fluid from the tube with a **syringe**. This fluid is then tested with **pH paper** (note not **litmus paper**) to determine the acidity of the fluid. If the pH is 5.5 or below then the tube is in the correct position. If this is not possible then correct verification of tube position is obtained with an **X-ray** of the chest/abdomen. This is the most reliable means of ensuring proper placement of an NG tube.[2] Future techniques may include measuring the concentration of enzymes such as **trypsin**, **pepsin**, and **bilirubin** to confirm the correct placement of the NG tube. As enzyme testing becomes more practical, allowing measurements to be taken quickly and cheaply at the bedside, this technique may be used in combination with pH testing as an effective, less harmful replacement of X-ray confirmation.[3] If the tube is to remain in place then a tube position check is recommended before each feed and at least once per day.

Only smaller diameter (12 **Fr** or less in adults) nasogastric tubes are appropriate for long-term feeding, so as to avoid irritation and erosion of the nasal mucosa. These tubes often have guidewires to facilitate insertion. If feeding is required for a longer period of time, other options, such as placement of a **PEG tube**, should be considered.



Foley catheter is a flexible tube that is often passed through the urethra and into the bladder. The tube has two separated channels, or lumens, running down its length. One lumen is open at both ends, and allows urine to drain out into a collection bag. The other lumen has a valve on the outside end and connects to a balloon at the tip; the balloon is inflated with sterile water when it lies inside the bladder, in order to stop it from slipping out. Foley catheters are commonly made from silicone rubber or natural rubber.

PARTS:



INDICATIONS:

1. Urinary retention
2. Unconscious patient
3. Bowel surgery
4. Urological/Gynaecological procedures
5. Urinary incontinence
6. Irrigation after TURP
7. Pelvic Fractures
8. Bed bound patients
9. Neurogenic bladder
10. Bladder outlet obstruction
11. Hematuria

CONTRAINDICATIONS:

1. Uretheral Trauma
2. High riding prostate

COMPLICATIONS:

There are several risks when using a Foley catheter (or catheters generally), including:

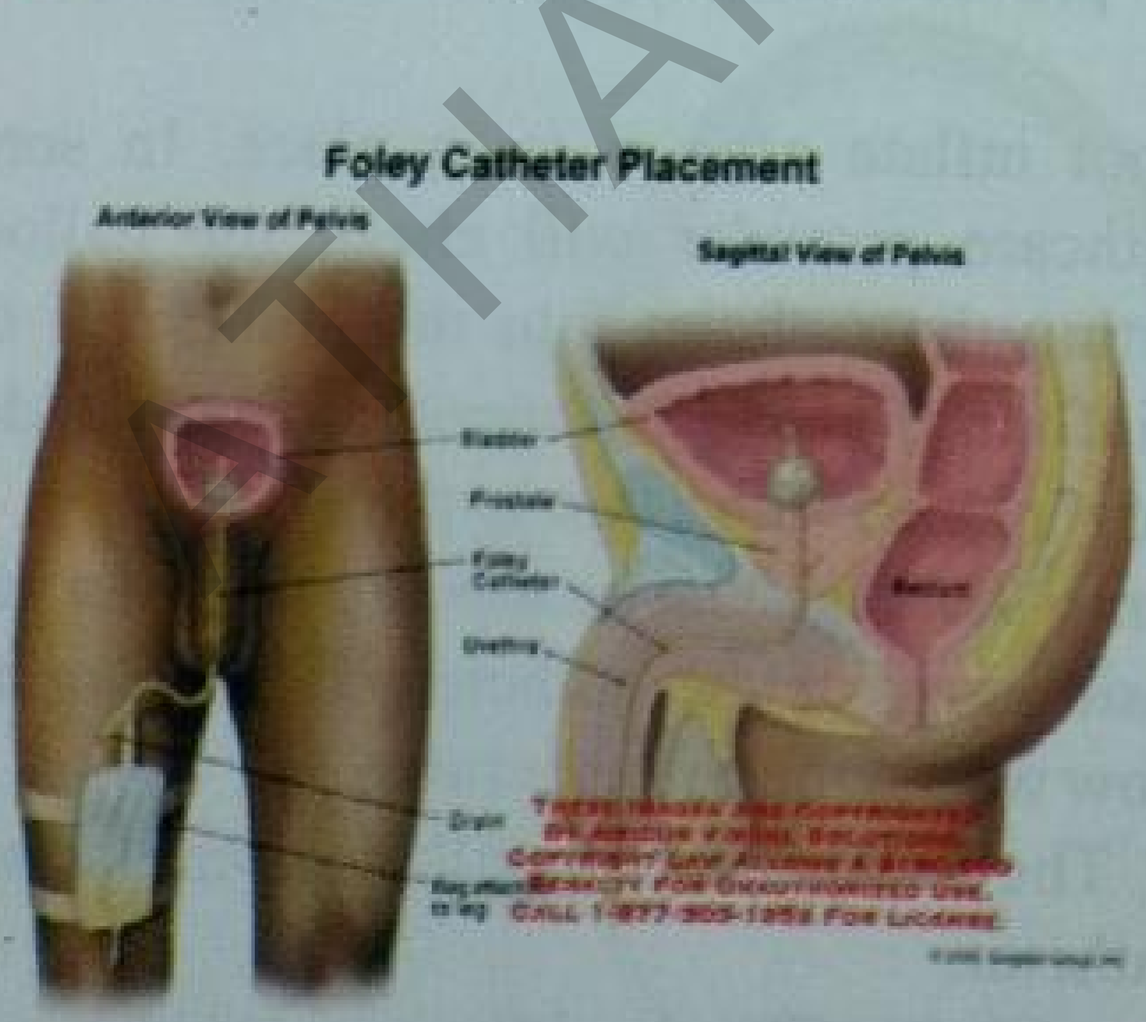
- The balloon can break while the catheter is being inserted. In this case, the healthcare provider will remove all the balloon fragments.
- The balloon might not inflate after it is in place. In some institutions, the healthcare provider will check the balloon inflation before inserting the catheter into the urethra. If the balloon still does not inflate after its placement into the bladder, it will be discarded and replaced with a new catheter.
- Urine stops flowing into the bag. The healthcare provider will check for correct positioning of the catheter and bag or for obstruction of urine flow within the catheter tube.
- Urine flow is blocked. The Foley catheter will be discarded and replaced with a new catheter.
- The urethra begins to bleed. The healthcare provider will monitor the bleeding.

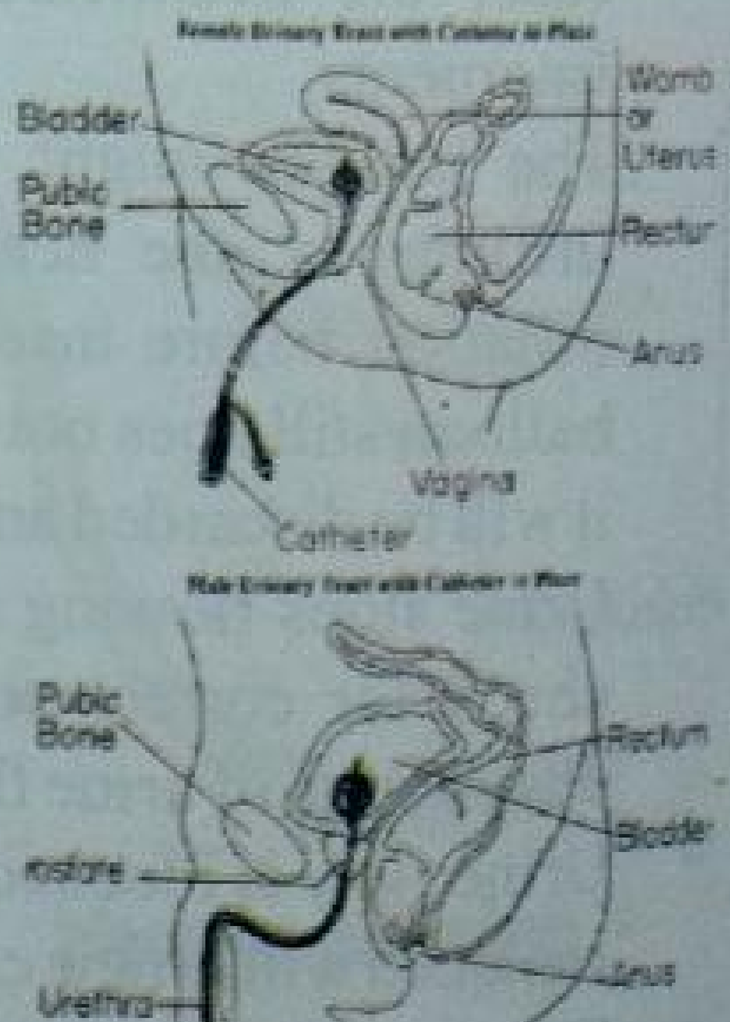
- Introduction of an infection into the bladder. The risk of infection in the bladder or urinary tract increases with the number of days the catheter is in place.
- If the balloon is opened before the Foley catheter is completely inserted into the bladder, bleeding, damage and even rupture of the urethra can occur.In some individuals, long-term permanent scarring and strictures of the urethra could occur.[4]
- Defective catheters may be supplied, which break in situ. The most common fractures occur near the distal end or at the balloon.

PROCEDURE:

EQUIPMENT:

- Sterile gloves - consider Universal Precautions
- Sterile drapes
- Cleansing solution e.g. Savlon
- Cotton swabs
- Forceps
- Sterile water (usually 10 cc)
- Foley catheter (usually 16-18 French)
- Syringe (usually 10 cc)
- Lubricant (water based jelly or xylocaine jelly)
- Collection bag and tubing





1. Gather equipment.
2. Explain procedure to the patient
3. Assist patient into supine position with legs spread and feet together
4. Open catheterization kit and catheter
5. Prepare sterile field, apply sterile gloves
6. Check balloon for patency.
7. Generously coat the distal portion (2-5 cm) of the catheter with lubricant
8. Apply sterile drape
9. If female, separate labia using non-dominant hand. If male, hold the penis with the non-dominant hand. Maintain hand position until preparing to inflate balloon.
10. Using dominant hand to handle forceps, cleanse peri-urethral mucosa with cleansing solution. Cleanse anterior to posterior, inner to outer, one swipe per swab, discard swab away from sterile field.
11. Pick up catheter with gloved (and still sterile) dominant hand. Hold end of catheter loosely coiled in palm of dominant hand.
12. In the male, lift the penis to a position perpendicular to patient's body and apply light upward traction (with non-dominant hand)
13. Identify the urinary meatus and gently insert until 1 to 2 inches beyond where urine is noted

14. Inflate balloon, using correct amount of sterile liquid (usually 10 cc but check actual balloon size)
15. Gently pull catheter until inflation balloon is snug against bladder neck
16. Connect catheter to drainage system
17. Secure catheter to abdomen or thigh, without tension on tubing
18. Place drainage bag below level of bladder
19. Evaluate catheter function and amount, color, odor, and quality of urine
20. Remove gloves, dispose of equipment appropriately, wash hands
21. Document size of catheter inserted, amount of water in balloon, patient's response to procedure, and assessment of urine

TRUCUT LIVER BIOPSY NEEDLE

INDICATIONS:

- Cirrhosis
- Chronic active hepatitis
- Unexplained hepatomegaly
- Hemochromatosis
- Drug related liver diseases

CONTRAINDICATIONS:

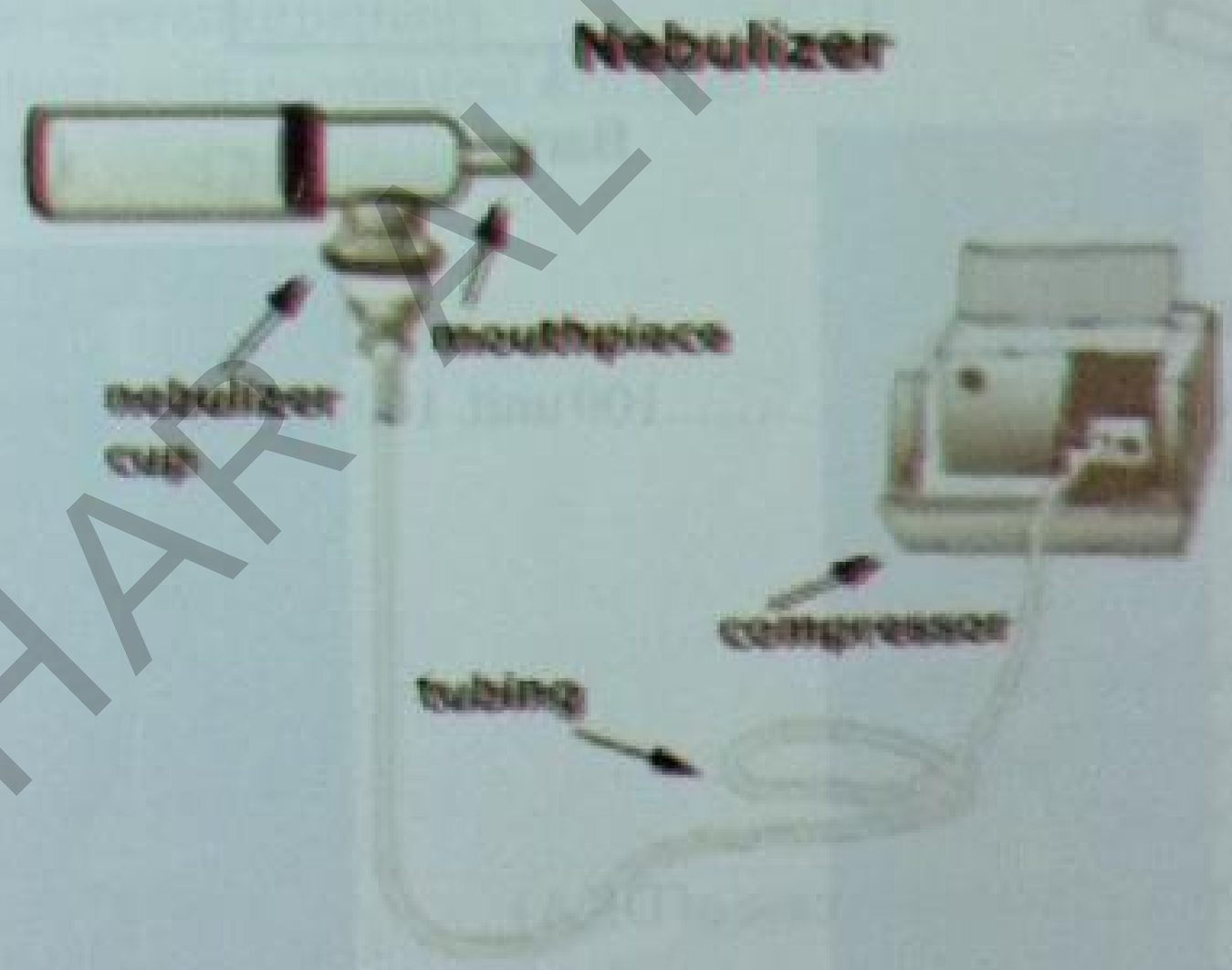
- Gross Ascites
- Uncooperative patient
- Thrombocyopenia
- Hepatocellular failure
- Severe COPD

COMPLICATIONS:

- Abdominal Pain
- Intraperitoneal Bleed
- Pleurisy
- Septicemia

SITE:

Anterior or midaxillary line one or two intercostal spaces below the upper limit of liver dullness after full expiration and is done on the right side(usually 9th or 10th spaces)



INDICATIONS:

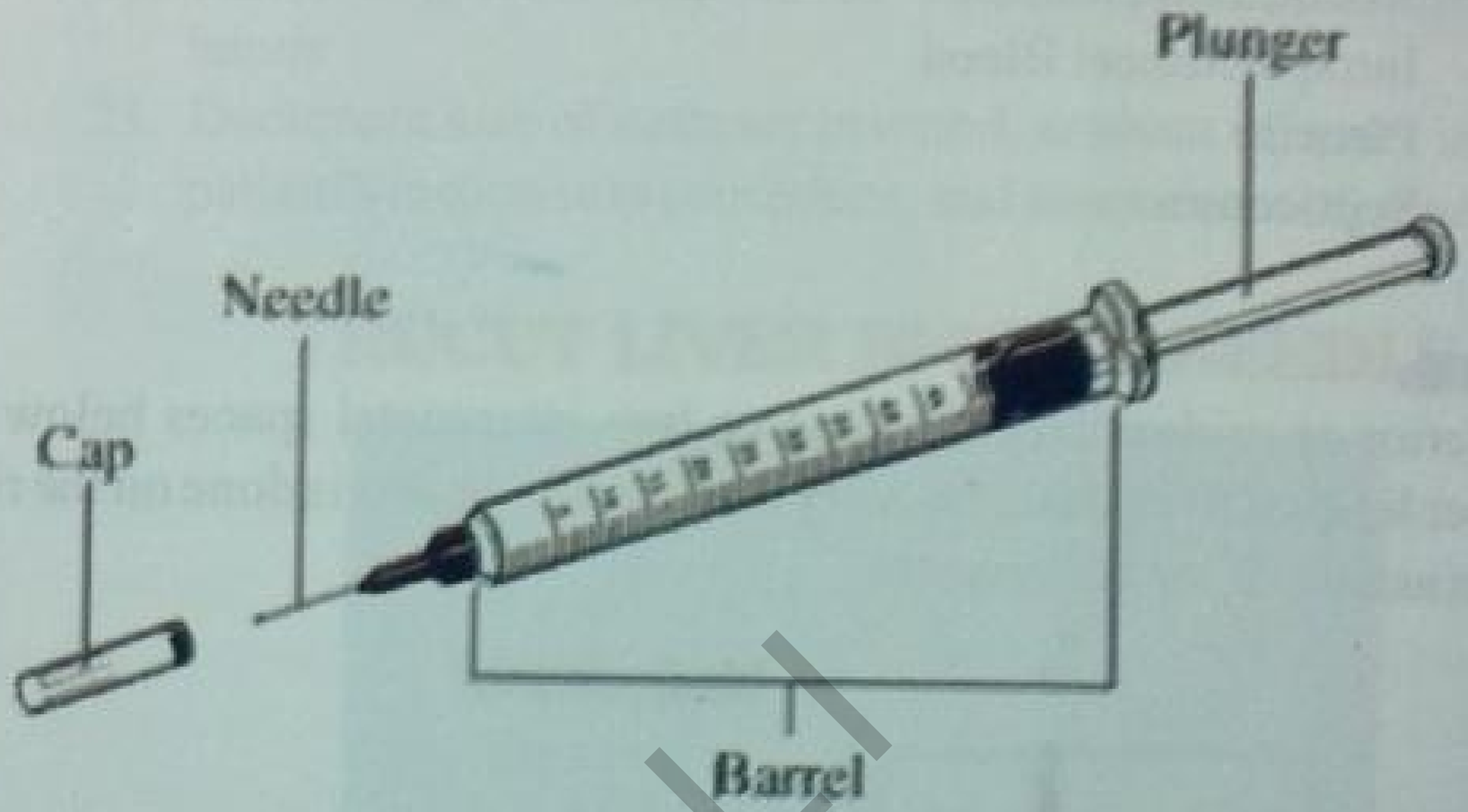
- Status Asthmaticus/Asthma
- COPD
- Emergency Management of SOB
- Croup

- Interstitial lung disease

DRUGS GIVEN THROUGH IT:

- Ventolin
- Ipratropium
- Corticosteroids

INSULIN SYRINGE



CALIBRATIONS:

It is marked as 10,20,30,.....100 unit. 100 units correspond to 1 ml of insulin.

USES:

- Give S/C insulin
- Give S/C heparin
- Give BCG
- Give I.V insulin(in case of DKA)

INSULIN ADMINISTRATION:

- Draw required amount if insulin
- Clean the site
- Hold the fold of skin
- Insulin syringe is inserted perpendicularly

Feeding Syringe

USES:

- For feeding calculated amount of liquids
- For giving medicines
- For gastric content aspiration
- For draining out urine
- For flushing catheters

INDICATIONS:

- Comatose Patients
- Post-operative patients
- Patients with esophageal strictures
- Peptic ulcer perforation

Trephine Biopsy Needle

Bone Marrow Aspirate Needle

Bone marrow examination refers to the pathologic analysis of samples of bone marrow obtained by **bone marrow biopsy** (often called a trephine biopsy) and **bone marrow aspiration**. Bone marrow examination is used in the diagnosis of a number of conditions, including leukemia, multiple myeloma, lymphoma, anemia, and pancytopenia. The bone marrow produces the cellular elements of the blood, including platelets, red blood cells and white blood cells. While much information can be gleaned by testing the blood itself (drawn from a vein by phlebotomy), it is sometimes necessary to examine the source of the blood cells in the bone marrow to obtain more information on hematopoiesis; this is the role of bone marrow aspiration and biopsy.

Bone marrow samples can be obtained by **aspiration** and **trephine biopsy**. Sometimes, a bone marrow examination will include both an aspirate and a biopsy. The aspirate yields semi-liquid bone marrow, which can be examined by a pathologist under a light microscope and analyzed by flow cytometry, chromosome analysis, or polymerase chain reaction (PCR). Frequently, a trephine biopsy is also obtained, which yields a narrow, cylindrically shaped solid piece of bone marrow. 2mm wide and 2 cm long (80 µL), which is examined microscopically (sometimes with the aid of immunohistochemistry) for cellularity and infiltrative processes. An aspiration, using a 20 mL syringe, yields approximately 300 µL of bone marrow. A volume greater than 300 µL is not recommended, since it may dilute the sample with peripheral blood.

Comparison

	Aspiration	Biopsy
Advantages	Fast Gives relative quantity of different cell types Gives material to further study, e.g. molecular genetics and flow cytometry	Gives cell and stroma constitution Represents all cells Explains cause of "dry tap" (aspiration gives no blood cells)
Drawbacks	Does not represent all cells	Slow processing

Aspiration does not always represent all cells since some such as lymphoma stick to the trabecula, and would thus be missed by a simple aspiration.

Site of procedure

Bone marrow aspiration and trephine biopsy are usually performed on the back of the hipbone, or posterior iliac crest. An *aspirate* can also be obtained from the sternum (breastbone). For the sternal aspirate, the patient lies on their back, with a pillow under the shoulder to raise the chest. A *trephine biopsy* should never be performed on the sternum, due to the risk of injury to blood vessels, lungs or the heart. Bone marrow is also perform from the tibial (shinbone) site in children up to 2 years of age. Spinous process aspiration in this site usually L3 - L4 is puncture in a lumber puncture position.

How the test is performed

A bone marrow biopsy may be done in a health care provider's office or in a hospital. Informed consent for the procedure is typically required. The patient is asked to lie on his or her abdomen (prone position) or on his/her side (lateral decubitus position). The skin is cleansed, and a local anesthetic such as lidocaine or procaine is injected to numb the area. Patients may also be pretreated with analgesics and/or anti-anxiety medications, although this is not a routine practice.

Typically, the aspirate is performed first. An aspirate needle is inserted through the skin using manual pressure and force until it abuts the bone. Then, with a twisting motion of clinician's hand and wrist, the needle is advanced through the bony cortex (the hard outer layer of the bone) and into the marrow cavity. Once the needle is in the marrow cavity, a syringe is attached and used to aspirate ("suck out") liquid bone marrow. A twisting motion is performed during the aspiration to avoid excess content of blood in the sample, which might be the case if an excessively large sample from one single point is taken.
Subsequently, the biopsy is performed if indicated. A different, larger trephine needle is inserted and anchored in the bony cortex.

The needle is then advanced with a twisting motion and rotated to obtain a solid piece of bone marrow. This piece is then removed along with the needle. The entire procedure, once preparation is complete, typically takes 1015 minutes.

If several samples are taken, the needle is removed between the samples to avoid blood coagulation.

In 2010, a power system was offered for sale. Previously, needles were forced through the bone manually, which required significant upper-body strength and effort by the person performing the procedure. The power system, made of a specially designed needle and a powered driver similar to a power drill, produced comparable or better core sample quality in tests. It was also much faster and easier.

After the procedure

After the procedure is complete, the patient is typically asked to lie flat for 510 minutes to provide pressure over the procedure site. After that, assuming no bleeding is observed, the patient can get up and go about their normal activities. Paracetamol (aka acetaminophen) or other simple analgesics can be used to ease soreness, which is common for 23 days after the procedure. Any worsening pain, redness, fever, bleeding or swelling may suggest a complication. Patients are also advised to avoid washing the procedure site for at least 24 hours after the procedure is completed.

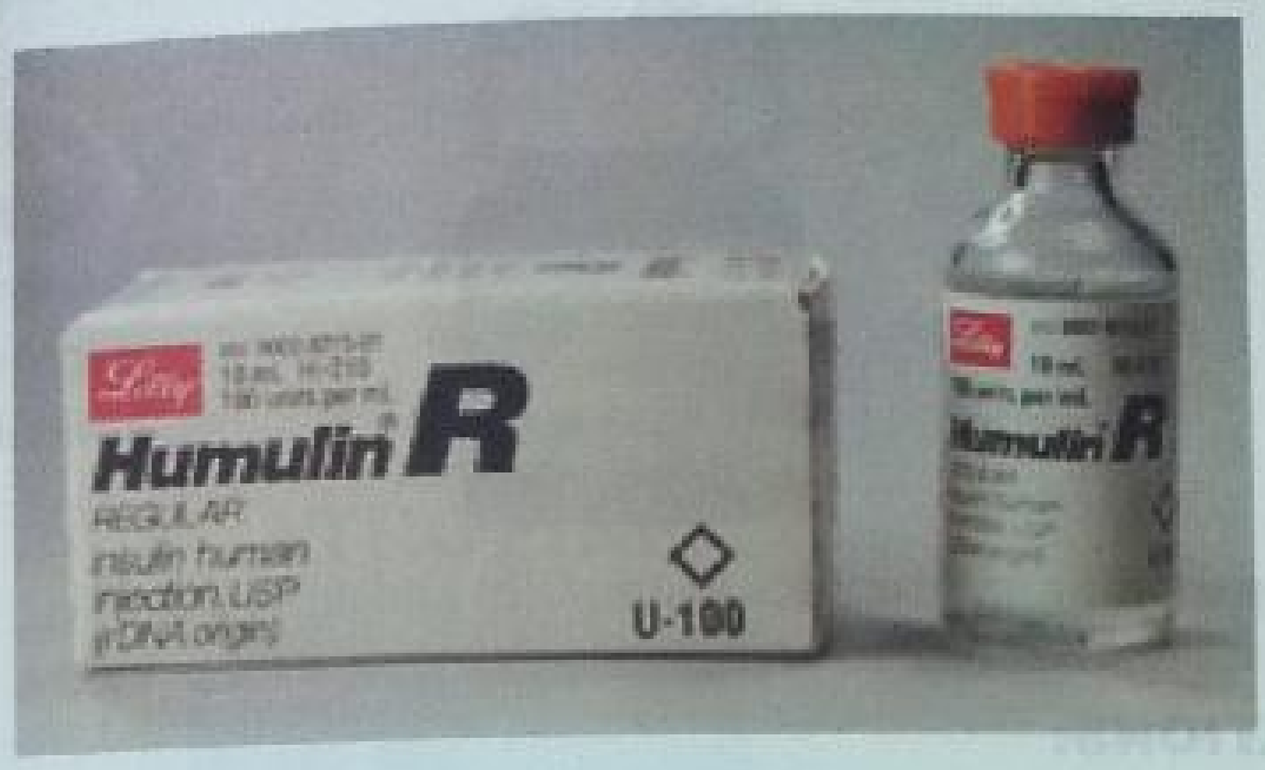
Contraindications

There are few contraindications to bone marrow examination. The only absolute reason to avoid performing a bone marrow examination is the presence of a severe bleeding disorder which may lead to serious bleeding after the procedure. If there is a skin or soft tissue infection over the hip, a different site should be chosen for bone marrow examination. Bone marrow aspiration and biopsy can be safely performed even in the setting of extreme thrombocytopenia (low plateletcount)

Complications

While mild soreness lasting 1224 hours is common after a bone marrow examination, serious complications are extremely rare.

INSULIN



TYPE	Onset of action	Maximum effect	Duration
Regular	30-60 min	2-3 hours	6-8 hours
NPH	2 hours	4-8 hours	16-20 hours
PZI	4 hours	8-24 hours	Upto 36 hours

ORIGINS:

- Animal origin insulin
- Human insulin

PREPARATIONS:

U-40 : It means there are 40 units of insulin in one ml.

U-100: It means there are 100 units of insulin in one ml.

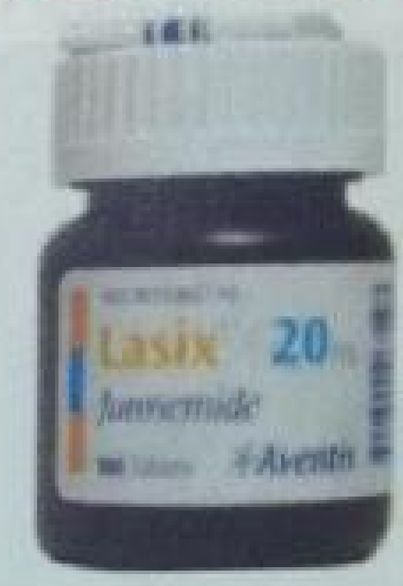
INDICATIONS:

1) Insulin dependant DM (subcutaneous)
2) Diabetic Ketoacidosis (I.V or I.M)
3) Hyperosmolar Nonketotic Diabetic coma (I.V or I.M)
4) Hypekalemia (I.V)
5) Preparing diabetic patient for surgery (subcutaneous)
6) Diabetic patient with infection (subcutaneous)

SIDE EFFECTS:

1) Hypoglycemia
2) Fat dystrophy/atropy
3) Hypersenstivity

FRUSEMIDE (Lasix)



It is a loop diuretic andd comes in ampules and tablets

INDICATIONS:

1) Heart Failure
2) Renal Failure
3) Nephrotic Syndrome
4) Cirrhosis with large ascites

SIDE EFFECTS:

1) Hypokalemia
2) Hyponatremia
3) Hypovolemia
4) Hypochloremic alkalosis
5) Hyperuricemia
6) Hyperglycemia

AMINOPHYLLINE

It is a bronchodilator. Injections comes in ampoules.
Concentration of drug is 25mg/ml and there is 250 mg of aminophylline in a 10 ml ampule. One to two ampules are given I.V stat diluted in 20 ml of saline followed by infusion at a rate of 0.45 to 0.9mg/kg/hour.

INDICATIONS:

1) Severe acute asthma
2) Reversible airways obstruction

SIDE EFFECTS:

1) Tachycardia
2) Palpitation
3) Nausea,vomiting
4) Arrhythmias
5) Convulsions

ATROPINE

It is anticholinergic drug.

INDICATIONS:

1) Drying secretions , eg, in organophosphate poisoning and as premedication before anesthesia.
2) Sinus bradycardia

SIDE EFFECTS:

1) Dry mouth
2) Loss of accommodation due to dilatation of pupil
3) Increased Intraocular pressure
4) Retention of urine
5) Constipation

ADRENALINE

It is a sympathomimetic drug and acts in both alpha and beta receptors.

INDICATIONS:

1) Cardiac arrest
2) Acute anaphylaxis
3) With local anesthetic to prolong its effect

SIDE EFFECTS:

1) Anxiety
2) Tremor
3) Tachycardia
4) Headache
5) Arrythmias
6) Cerebral Hemorrhage

LIGNOCAINE (XYLOCAINE)

It is a local anesthetic.

INDICATIONS:

1) Local anesthesia
2) Multiple ventricular ectopics
3) Ventricular tachycardia

CONTRAINDICATIONS:

1) Hypovolemia
2) Complete Heart Block

SIDE EFFECTS:

1) Hypotension
2) Bradycardia
3) Cardiac arrest
4) Agitation
5) Respiratory Depression
6) Convulsions

STEROIDS

There are number of preparations of steroids available. Commonly, following two injectable forms are kept in the examination.

1) Solucortef (Hydrocortisone)
2) Decadron (Dexamethsone)

INDICATIONS:

A. Conditions requiring immediate injectable steroids: (4A,s)

- Anaphylactic shock
- Angioedema
- Acute severe asthma

- Cerebral edema(dexamethasone)
- Acute adrenal crises

B. Replacement Therapy:

- Addison Disease
- Acute adrenal crises
- Adrenalectomy
- Hypopituitarism

C. Immune mediated conditions:

- Anaphylactic reaction
- Angioedema
- Nephrotic Syndrome
- Rheumatic Fever
- Rheumatoid Arthritis
- SLE
- Chronic Active Hepatitis
- Temporal Arteritis
- Polyarteritis Nodosa

D. Haematology:

- Acute Leukemia
- Lymphomas
- Acquired haemolytic anemia
- Thrombocytopenic purpure

E. SKIN:

- Exfoliative dermatitis
- Pemphigus

F. OTHERS:

- Cerebral edema (dexamethasone)
- Asthma
- Inflammatory bowel disease
- Acute transplant rejection
- Septic Shock(doubtful role)

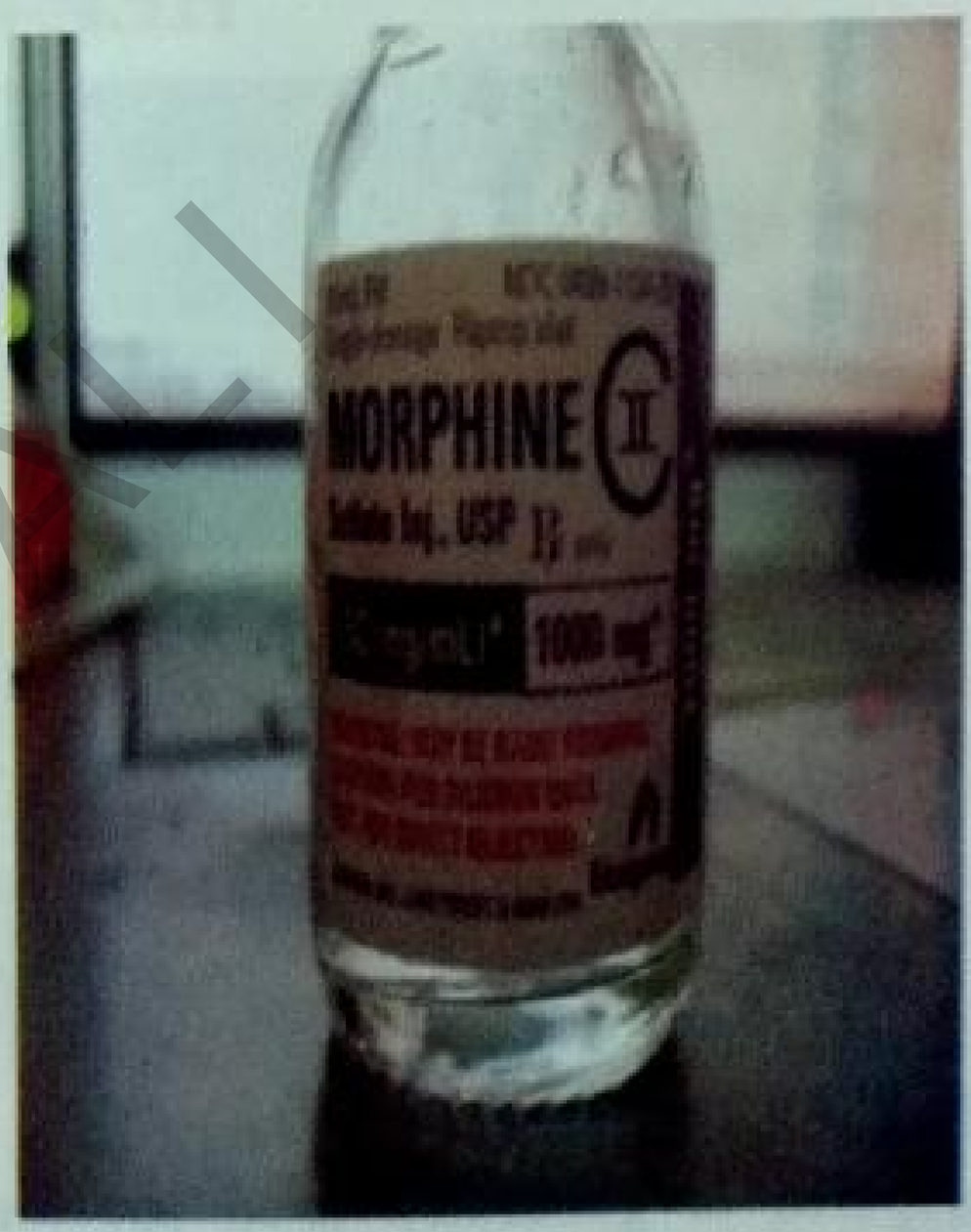
SIDE EFFECTS:

A. Hypertension

B. Diabetes Mellitus
C. Osteoporosis
D. Proximal Myopathy
E. Peptic Ulceration
F. Infection
G. Cushing Syndrome
H. Growth retardation (in children)
I. Mental Disturbances (paranoid state, depression , euphoria)
J. Adreanl suppression

MORPHINE

It is a narcotic analgesic



INDICATIONS:

- Severe pain e.g MI
- Pain in terminal care
- Perioperative analgesia
- Acute pulmonary edema

SIDE EFFECTS:

- Nausea
- Vomiting
- Constipation
- Drowsiness
- Respiratory Depression
- Hypotension
- Dependance(Addiction)

CONTRAINDICATIONS:

- Head Injury
- Raised Intracranial pressure

GENTAMICIN

Gentamicin is an aminoglycoside antibiotic. Used to treat many types of bacterial infections, particularly those caused by Gram-negative organisms. However, gentamicin is not used for *Neisseria gonorrhoeae*, *Neisseria meningitidis* or *Legionella pneumophila*. Gentamicin is also ototoxic and nephrotoxic, with this toxicity remaining a major problem in clinical use.

HEPARIN

INDICATIONS:

Heparin is generally used for anticoagulation for the following conditions:

- Acute coronary syndrome, e.g., NSTEMI
- Atrial fibrillation
- Deep-vein thrombosis and pulmonary embolism
- Cardiopulmonary by pass for heart surgery.
- ECMO circuit for extracorporeal life support
- Hemofiltration
- Indwelling central or peripheral venous catheters

CONTRAINDICATIONS:

- Thrombocytopenia
- Bleeding Diathesis

SIDE EFFECTS:

- Heparin Induced Thrombocytopenia
- Hyperkalemia
- Osteoporosis
- Alopecia

ANTIDOTE:

Protamine sulfate (1 mg per 100 units of heparin that had been given over the past four hours) has been given to counteract the anticoagulant effect of heparin.

Haemaccel

Haemaccel (a registered trademark) is a type of intravenous colloid used in the prevention or treatment of shock associated with reduction in effective circulating blood volume due to hemorrhage, loss of plasma (burns, peritonitis, pancreatitis, crush injuries), or loss of water and electrolytes from persistent vomiting and diarrhea. Haemaccel contains degraded gelatin.

It can be used as an alternative treatment for a Jehovah's Witness patient who refuses a blood transfusion.

Side Effects:

- Skin Necrosis
- Anaphylaxis
- Air embolism

DOBUTAMINE

Dobutamine is a sympathomimetic drug Used in the treatment of heart failure and cardiogenic shock. Its primary mechanism is direct stimulation of β_1 receptors of the sympathetic nervous System.

Clinical uses

Dobutamine is used to treat acute but potentially reversible heart failure, such as which occurs during cardiac surgery or in cases of septic or cardiogenic shock, on the basis of its positive inotropic action. Dobutamine can be used in cases of congestive heart failure to increase cardiac output. It is indicated when parenteral therapy is necessary for inotropic support in the short-term treatment of patients with cardiac decompensation due to depressed contractility, which could be the result of either organic heart disease or cardiac surgical procedures. It is not useful in ischemic heart disease because it increases heart rate and thus increases myocardial oxygen demand.

The drug is also commonly used in the hospital setting as a pharmacologic stress testing agent to identify coronary artery disease.

Adverse effects

Primary side effects include those commonly seen for β_1 active sympathomimetics, such ashypertension, angina, arrhythmia, and

tachycardia. Used with caution in atrial fibrillation as it has the effect of increasing the atriovenrticular (AV) conduction.
The most dangerous side effect of dobutamine is increased risk of arrhythmia, including fatal arrhythmias. Studies suggest that while this medication can improve symptoms in chronic CHF, it actually shortens a patient's lifespan.

Zolmitriptan

Zolmitriptan is a selective serotonin receptor agonist of the 1B and 1D subtypes. It is a triptan, used in the acute treatment of migraine attacks with or without aura and cluster headaches.

Indications

Zolmitriptan is used for the acute treatment of migraines with or without aura in adults. Zolmitriptan is not intended for the prophylactic therapy of migraine or for use in the management of hemiplegic or basilar migraine.
Zolmitriptan is available as a swallowable tablet, an oral disintegrating tablet, and a nasal spray, in doses of 2.5 and 5 mg. People who get migraines from aspartame should not use the disintegrating tablet (Zomig ZMT), which contains aspartame.

[edit Contraindications and precautions

Zolmitriptan should not be given to patients with ischemic heart disease (angina pectoris, history of myocardial infarction, or documented silent ischemia) or to patients who have symptoms or findings consistent with ischemic heart disease, coronary artery vasospasm, including Prinzmetal's angina, or other significant underlying cardiovascular disease.
Zolmitriptan may increase blood pressure, it should not be given to patients with uncontrolled hypertension, should not be used within

24 hours of treatment with another 5-HT1 agonist, or an ergotamine-containing or ergot-type medication like dihydroergotamine or methysergide, and should not be administered to patients with hemiplegic or basilar migraine.
Concurrent administration of MAOI or use of zolmitriptan within 2 weeks of discontinuation of MAO-A inhibitor therapy is contraindicated.

Adverse reactions

The Zomig ZMT dissolvable pill contains aspartame, and should be avoided by anyone sensitive to that ingredient.
Rarely, serious cardiac events, including myocardial infarction, have been associated with zolmitriptan.
Reported minor adverse reactions include: hypesthesia, paresthesia (all types), warm and cold sensations, chest pain, throat and jaw tightness, dry mouth, dyspepsia, dysphagia, nausea, somnolence, vertigo, asthenia, myalgia, myasthenia and sweating.

PHENYTOIN

Phenytoin sodium is a commonly used antiepileptic. Phenytoin acts to suppress the abnormal brain activity seen in seizure by reducing electrical conductance among brain cells by stabilizing the inactive state of voltage-gated sodium channels. Aside from seizures, it is an option in the treatment of trigeminal neuralgia in the event that carbamazepine or other first-line treatment seems inappropriate.
SIDE EFFECTS:

Neurologic:

- Nystagmus
- Sedation
- Cerebral Ataxia

Hematological:

- Megaloblastic anemia

Teratogenic:

- Cleft lift/palate
- Microcephaly

Dermatological:

- Rash

CONTRAINDICATIONS:

- Hypersensitivity to phenytoin
- Liver Diseases

ATENOLOL

Atenolol is a selective β_1 receptor antagonist, a drug belonging to the group of beta blockers (sometimes written β blockers), a class of drugs used primarily in cardiovascular diseases.

USES:

Atenolol is used for a number of conditions including: hypertension, angina, acute myocardial infarction, supraventricular tachycardia, ventricular tachycardia, and the symptoms of alcohol withdrawal.

It is also used to treat the symptoms of Graves' disease until antithyroid medication can take effect.

Due to its hydrophilic properties, the drug is less suitable in migraine prophylaxis compared to propranolol, because, for this indication, atenolol would have to reach the brain in high concentrations, which is not the case.[citation needed]

CONTRAINDICATIONS:

bradycardia (pulse less than 50 bpm)
cardiogenic shock

symptomatic hypotension (blood pressure of less than 90/60 mm Hg with dizziness, vertigo etc.)
angina of the Prinzmetal type (vasospastic angina)
metabolic acidosis (a severe condition with a more acidic blood than normal)
severe disorders in peripheral arterial circulation
AV-Blockage of second and third degree (a particular form of arrhythmia)
acutely decompensated congestive heart failure (symptoms may be fluid retention with peripheral edema and/or abdominal fluid retention (ascites), and/or lung edema)
sick sinus syndrome (a particular form of arrhythmia)
hypersensitivity and/or allergy to atenolol
pheochromocytoma (a rare type of tumor of the adrenal glands)
Propanol should not be taken by patients with preexisting bronchial asthma,[citation needed] and only if clearly needed during pregnancy, as atenolol may retard fetal growth and possibly cause other abnormalities.[citation needed]

SIDE EFFECTS:

- indigestion, constipation
- dry mouth
- dizziness or faintness (especially cases of orthostatic hypotension)
- cold extremities
- hair loss
- impotence
- rhinitis
- depression
- confusion
- insomnia, nightmares
- fatigue, weakness or lack of energy

MORE SERIOUS ARE:

- hallucinations
- low blood pressure (hypotension)
- skin reactions, e.g. rash, hives, flaking of skin, worsening of psoriasis
- sensation of 'pins and needles' hands or feet
- irritated eyes, visual disturbances

- difficulty hearing
- difficulty speaking
- unsteadiness when walking

DIGOXIN

The most common indications for digoxin are atrial fibrillationand atrial flutter with rapid ventricular response, but beta-blockers or calcium channel-blockers should be the first choice

ADVERSE REACTION:

Digoxin toxicity is a poisoning that occurs when excess doses of digoxin Symptoms include hypersalivation, fatigue, nausea/vomiting, changes in heart rate and rhythm, loss of appetite (anorexia), diarrhea, visual disturbances (yellow or green halos around objects), confusion, dizziness, nightmares, agitation, and/or depression, as well as a higher acute sense of sensual activities.

Treatment

Digoxin immune Fab used to treat digoxin toxicity

The primary treatment of digoxin toxicity is digoxin immune Fab. Digoxin should not be given if the apical heart rate is below 60 BPM (beats per minute).

Other treatment that may be tried to treat life-threatening arrhythmias, until digoxin Immune Fab is acquired are magnesium, phenytoin, and lidocaine.[11]

Atropine is also used in cases of bradyarrhythmias.

18.40 The main uses, dosages and side-effects of the most widely used anti-arrhythmic drugs

Drug	Main uses	Route	Dose (adult)	Important side-effects
Class I				
Disopyramide	Prevention and treatment of atrial and ventricular tachyarrhythmias	I.v.	2 mg/kg at 30 mg/min, then 0.4 mg/kg/hr (max 800 mg/day)	Myocardial depression, hypotension, dry mouth, urinary retention
		Oral	300–800 mg daily in divided dosage	
Lidocaine	Treatment and short-term prevention of VT and VF	I.v.	Bolus 50–100 mg, 4 mg/min for 30 mins, then 2 mg/min for 2 hrs, then 1 mg/min for 24 hrs	Myocardial depression, confusion, convulsions
Mexiletine	Prevention and treatment of ventricular tachyarrhythmias	I.v.	Loading dose: 100–250 mg at 25 mg/min, then 250 mg in 1 hr, then 250 mg in 2 hrs Maintenance therapy: 0.5 mg/min	Myocardial depression, GI irritation, confusion, dizziness, tremor, nystagmus, ataxia
		Oral	200–250 mg 8-hourly	
Flecainide	Prevention and treatment of atrial and ventricular tachyarrhythmias	I.v.	2 mg/kg over 10 mins, then 1.5 mg/kg/hr for 1 hr, then 0.1 mg/kg/hr	Myocardial depression, dizziness
		Oral	50–100 mg 12-hourly	
Propafenone	Prevention and treatment of atrial and ventricular tachyarrhythmias	Oral	150 mg 8-hourly for 1 wk, then 300 mg 12-hourly	Myocardial depression, dizziness
Class II				
Atenolol, Bisoprolol, Metoprolol, Sotalol	Treatment and prevention of SVT and AF Prevention of VEs and exercise-induced VT	I.v.	2.5 mg at 1 mg/min repeated at 5-min intervals (max 10 mg)	Myocardial depression, bradycardia, bronchospasm, fatigue, depression, nightmares, cold peripheries
		Oral	25–100 mg daily	
Bisoprolol		Oral	2.5–10 mg daily	
Metoprolol		I.v.	5 mg over 2 mins to a maximum of 15 mg	
		Oral	50–100 mg 8- or 12-hourly	
Sotalol		I.v.	10–20 mg slowly	Sotalol can cause torsades de pointes
		Oral	40–160 mg 12-hourly	
Class III				
Amiodarone	Serious or resistant atrial and ventricular tachyarrhythmias	I.v.	5 mg/kg over 20–120 mins, then up to 15 mg/kg/24 hrs	Photosensitivity, skin discoloration, corneal deposits, thyroid dysfunction, alveolitis, nausea and vomiting, hepatotoxicity, peripheral neuropathy, torsades de pointes; potentiates digoxin and warfarin
		Oral	Initially 600–1200 mg/day, then 100–400 mg daily	
Class IV				
Verapamil	Treatment of SVT, control of AF	I.v.	5–10 mg over 30 secs	Myocardial depression, hypotension, bradycardia, constipation
		Oral	40–120 mg 8-hourly or 240 mg SR daily	
Other				
Atropine	Treatment of bradycardia and/or hypotension due to vagal overactivity	I.v.	0.6–3 mg	Dry mouth, thirst, blurred vision, atrial and ventricular extrasystoles
Adenosine	Treatment of SVT, aid to diagnosis in uncertified tachycardia	I.v.	3 mg over 2 secs, followed if necessary by 6 mg, then 12 mg at intervals of 1–2 mins	Flushing, dyspnoea, chest pain Avoid in asthma
Digoxin	Treatment and prevention of SVT, rate control of AF	I.v.	Loading dose: 0.5–1 mg (total), 0.5 mg over 30 mins, then 0.25–0.5 mg 4- to 8-hourly to maximum total of 1 mg, assessing response before each additional dose	GI disturbance, xanthopsia, arrhythmias (see Box 18.43)
		Oral	0.5 mg 6-hourly for 2 doses, then 0.125–0.25 mg daily	

AF = atrial fibrillation; SR = sustained-release formulation; SVT = supraventricular tachycardia; VE = ventricular ectopic; VF = ventricular fibrillation; VT = ventricular tachycardia

American Heart Association.

BLS for Healthcare Providers Quick Reference

C-A-B (Not A-B-C)

C — Chest Compressions

A — Airway

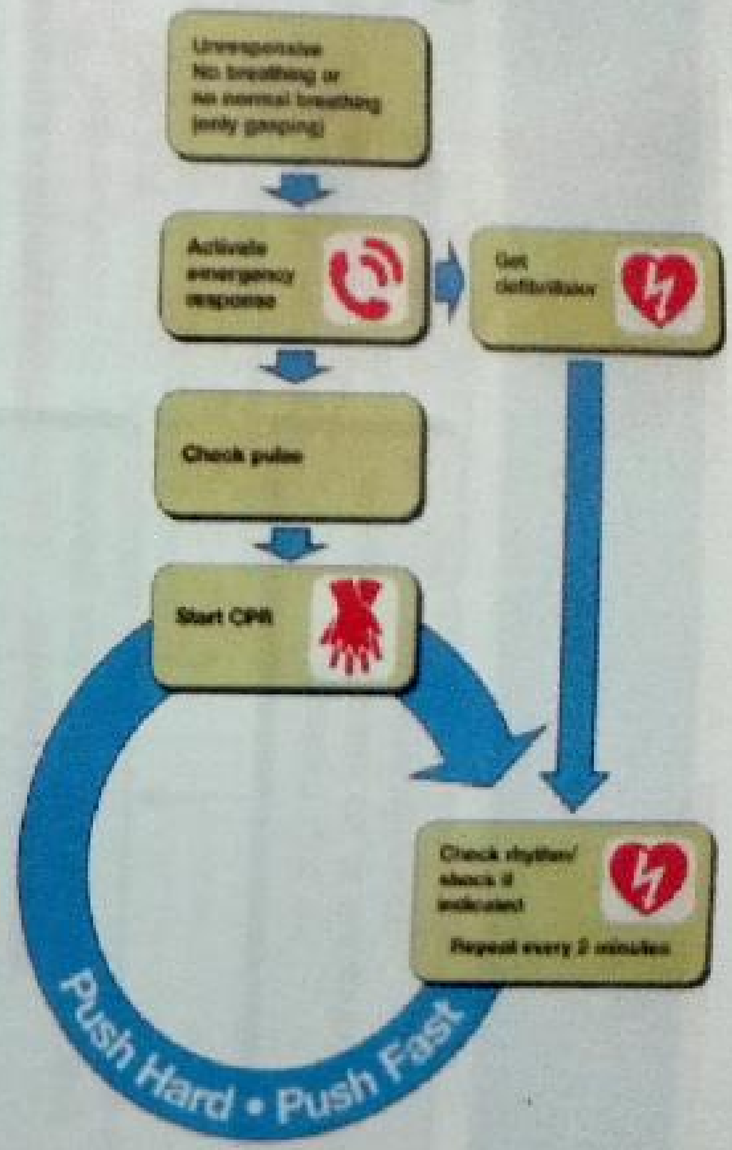
B — Breathing

BLS for Healthcare Providers Critical Concepts

High-quality CPR improves a victim's chances of survival. The critical characteristics of high-quality CPR include

- **Start compressions within 10 seconds** of recognition of cardiac arrest.
- **Push hard, push fast:** Compress at a rate of at least 100/min with a depth of at least 2 inches (5 cm) for adults, approximately 2 inches (5 cm) for children, and approximately 1½ inches (4 cm) for infants.
- **Allow complete chest recoil** after each compression.
- **Minimize interruptions** in compressions (try to limit interruptions to <10 seconds).
- **Give effective breaths** that make the chest rise.
- **Avoid excessive ventilation.**

Simplified Adult BLS Algorithm for Healthcare Providers



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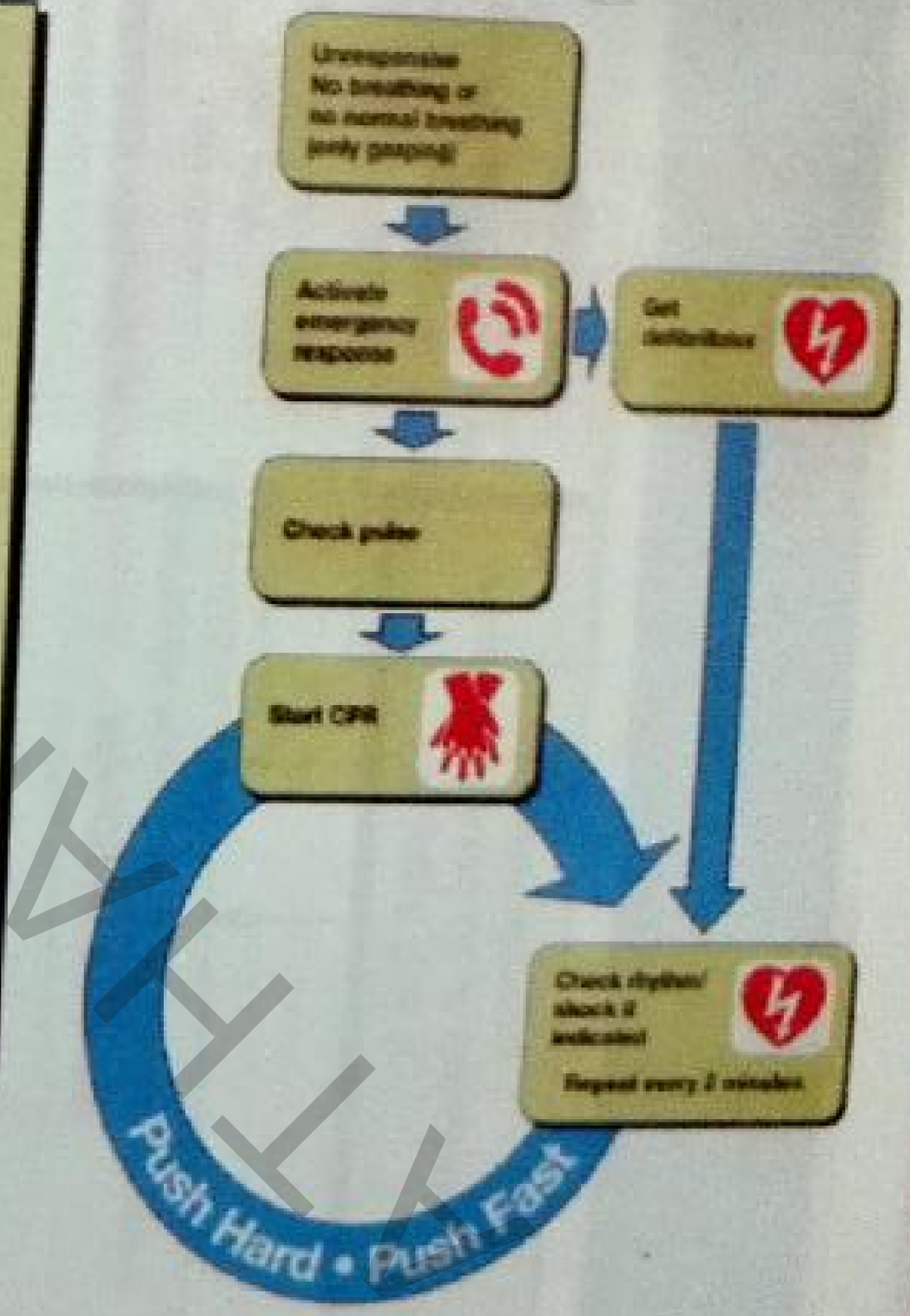

Chest Compressions

Airway

Breathing

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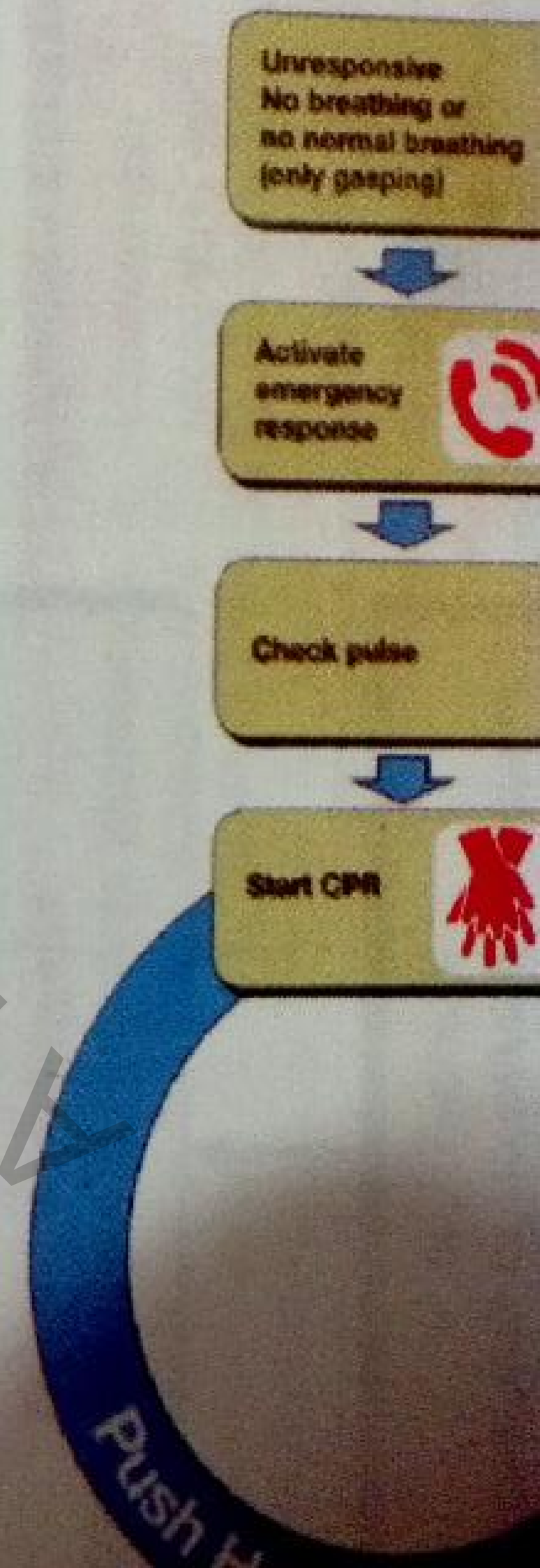

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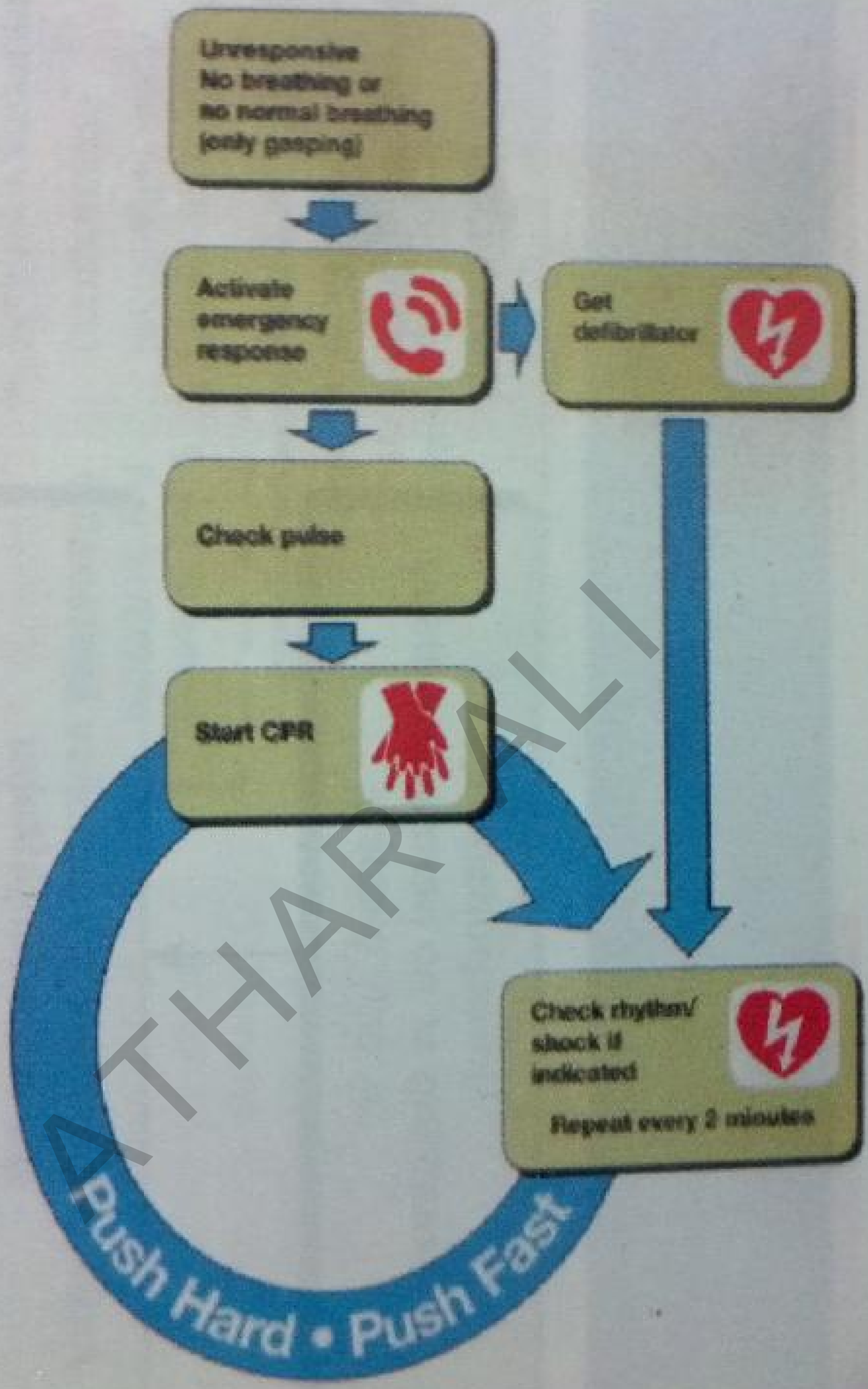

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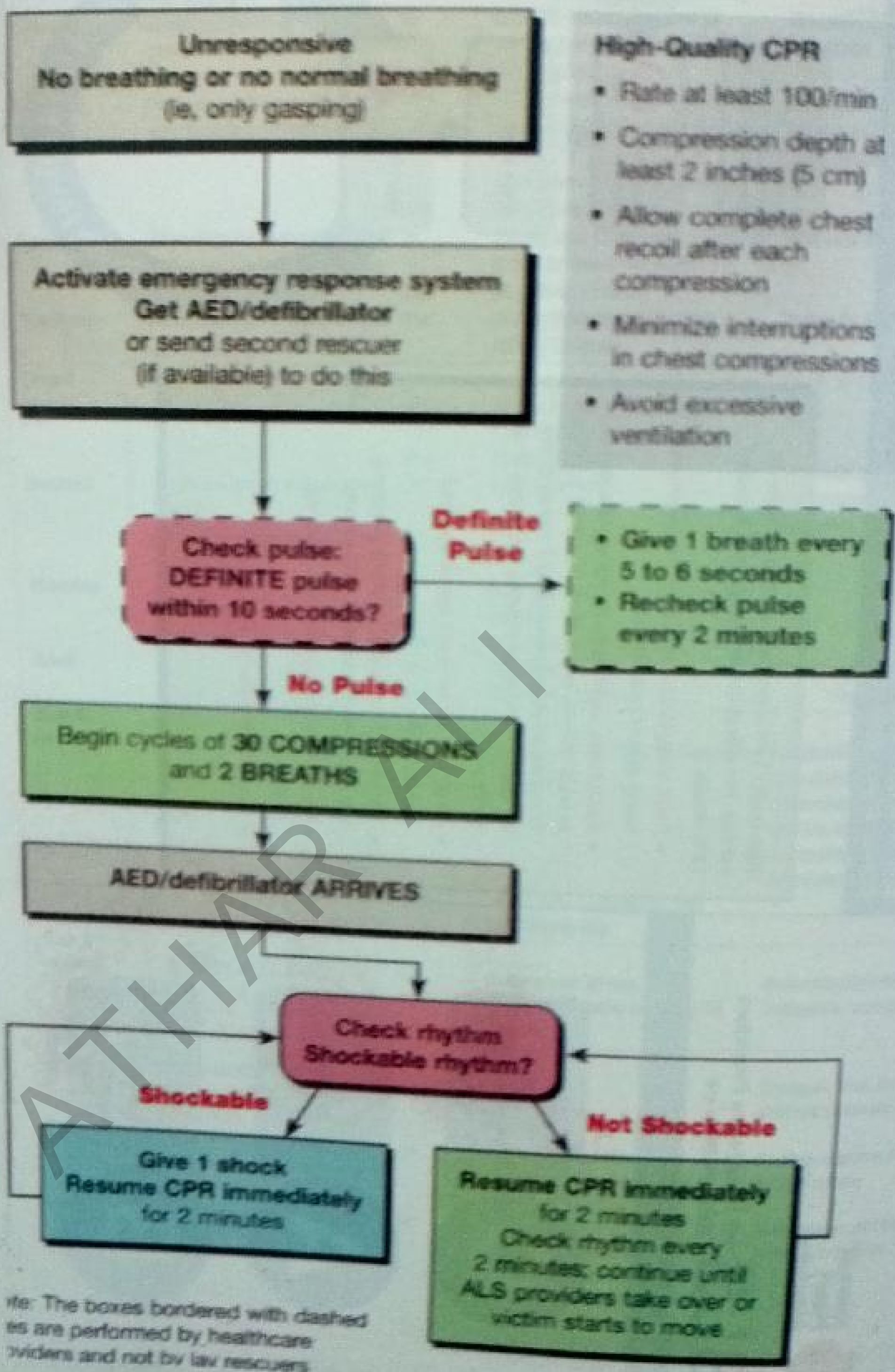

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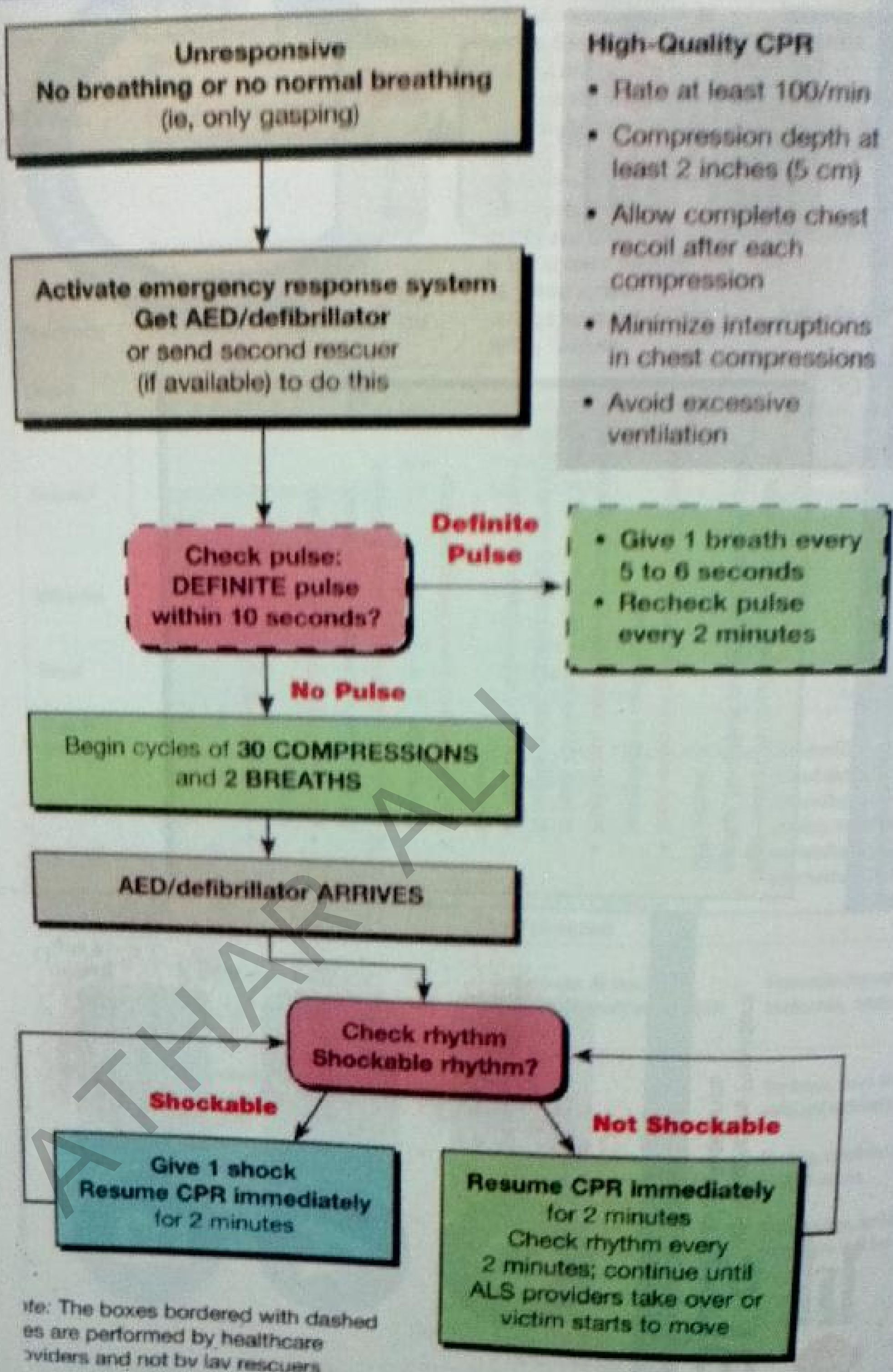

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Pediatric BLS Algorithm for Healthcare Providers

Unresponsive
Not breathing or **only gasping** -
Send someone to activate emergency response system, get AED/defibrillator

Lone Rescuer:
For SUDDEN COLLAPSE, activate emergency response system, get AED/ defibrillator

High-Quality CPR
- Rate at least 100/min
- Compression depth to at least ⅓ anterior-posterior diameter of chest, about 1½ inches (4 cm) in infants and 2 inches (5 cm) in children
- Allow complete chest recoil after each compression
- Minimize interruptions in chest compressions
- Avoid excessive ventilation

Check pulse:
DEFINITE pulse within 10 seconds?

Definite Pulse

- **Give 1 breath every 3 seconds**
- **Add compressions if pulse remains <80/min with poor perfusion despite adequate oxygenation and ventilation**
- **Recheck pulse every 2 minutes**

No Pulse

One **Rescuer:** Begin cycles of **30 COMPRESSIONS** and **2 BREATHS**

Two Rescuers: Begin cycles of **15 COMPRESSIONS** and **2 BREATHS**

After about 2 minutes, activate emergency response system and get AED/defibrillator (if not already done).
Use AED as soon as available.

Check rhythm
Shockable rhythm?

Shockable

Give 1 shock
Resume CPR immediately
for 2 minutes

Not Shockable

Resume CPR immediately
for 2 minutes
Check rhythm every 2 minutes; continue until ALS providers take over or victim starts to move

Note: The boxes bordered with dashed lines are performed by healthcare providers and not by lay rescuers