Scenarios taken from Friedman et al (1999): “Enhancement of Clinicians’ Diagnostic

Reasoning by Computer-Based Consultation”

Notes from the authors:

* Cases are from three medical centres
* Findings were removed to make the case more challenging.
* Rated difficulty: Average difficulty rating of three clinicians on a seven point scale (1-7). These differ somewhat from ‘actual empirical’ difficulty.

The following scenarios are adapted from these cases. The true underlying condition is found in the leftmost column. There are differences in the specialised test results available, as not all tests are relevant to all scenarios. Hence, for each case, all tests with available results are shown.

Personal Notes:

* The case numbers (eg #031) is for my own documentation of which scenario is being used from the wider bank of vignettes.
* There was some interpretation in combining certain distinct but related tests into one ‘test’ for the purposes of our study (eg Bone and Joint Radiographs, Urine Culture and Protein Electrophoresis).
* Scenarios are from the US, so terminology may require tweaking for a UK audience.
* All participants are shown presenting complaints to start with, all other information has to be requested within the stage (ie patient history, physical examination etc) they are in.

|  |  |  |  |
| --- | --- | --- | --- |
| **CASE** | **STAGE** | **TEST** | **RESULT** |
| #031  Cryoglobul-  inaemia  Difficulty Rating: 6.0 | Presenting Complaint | - | 38 year old male presented with swelling of his face and  extremities for 6 weeks. |
| Patient History | History of Presenting Complaint | The patient had a long history of intravenous drug abuse. Six  months prior to admission, he had enrolled in a Methadone maintenance program, and had stopped using intravenous drugs. At that time, he was found to be hypertensive, and was started on hydrochlorothiazide. Six weeks prior to admission, he noted painless swelling of his face, and upper and lower extremities. He gained 9kg in weight. He denied fever, rash, sore throat, arthralgias, myalgias, Raynaud's phenomenon, chest pain, cough, shortness of breath, haematuria, or  declining urine output. |
| Past Medical History | No prior history of cardiac, hepatic, or renal disease. |
| Medications | Methadone, hydrochlorothiazide. |
| Allergies | None known |
| Family History | Noncontributory |
| Social History | He is married and has two children. He works as a factory clerk. He had a past history of intravenous use of cocaine and brown heroin, and had shared needles. He does not use  tobacco or alcohol. |
| Physical Examination | Take Pulse | 100 |
| Measure Blood Pressure | 175/110 mmHG |
| Assess Respiratory Rate | 17/min |
| Auscultate Lungs | The lungs are clear. |
| Auscultate the Heart | Cardiac examination revealed a normal apical impulse, and normal S1 and S2, without S3 or S4 gallop. There was a II/VI systolic ejection murmur at the apex, without radiation. |
| Assess Eyes | The conjunctivae were pink. The sclerae were  anicteric. The pupils were equal, round, and reactive to light and accommodation. |
| Measure Temperature | 37.7 degrees celsius |
| Abdomen Examination | The abdomen was soft and non-tender, with normoactive bowel  sounds. The liver was 11 cm in the midclavicular line. The spleen was not enlarged. |
| Rectal Examination | Rectal examination showed no tenderness or masses; Faecal Occult Blood Test was negative. |
| Neck/Throat Examination | The oropharynx was benign. The neck was supple. There was no jugular venous distention. The thyroid gland was normal  in size. There was no lymphadenopathy. |
| Assess Head | The head was normocephalic and atraumatic. |
| Neurologic Exam Record | The neurologic examination was normal. |
| Assess Extremities | The upper and lower extremities showed 4+ pitting oedema; no rash or purpuric lesions were seen. |
| Generalised  Testing | FBC - Hb | 120 (Normal: 140-180 g/L) |
| FBC - Hct | 35 (Normal: 42-52%) |
| FBC - MCV | 88 (Normal: 84-99 fl) |
| FBC - WBC | 11.7 (Normal: 4.8-10.8 x 109/L) |
| FBC - Neut | 78 (Normal: 40-70%) |
| FBC – Lymph’s | 19 (Normal: 25-45%) |
| FBC – Platelet Count | 350 (Normal: 150-400 x 109/l) |
| Biochemistry - Sodium | 137 (Normal: 135-149 mmol/l) |
| Biochemistry - Potassium | 2.7 (Normal: 3.5-5.3 mmol/l) |
| Biochemistry - Chloride | 98 (Normal: 98-108 mmol/l) |
| Biochemistry – CO2 | 28 (Normal: 24-32 mmol/L) |
| Biochemistry - UREA | 1.3 (Normal: 0.3-1.1 mmol/L) |
| Biochemistry - Creatinine | 176.8 (Normal: 44.2-132.6 µmol/L) |
| Biochemistry - Glucose | 5.0 (Normal: 3.9-6.1 mmol/L) |
| Biochemistry – Protein Total | 73 (Normal: 60-80 g/L) |
| Biochemistry - Albumin | 24 (Normal: 36-500 g/L) |
| Biochemistry – AST (SGOT) | 30 (Normal: 0-50 U/L) |
| Biochemistry - ALP | 274 (Normal: 40-125 U/L) |
| Specialised Testing | Chest X-Ray | Normal heart and lungs |
| Urinalysis | Specific gravity 1.030, 3+ protein; microscopic examination showed 40-50 RBCs, 10-15 WBCs, many granular and hyaline casts, and oval fat bodies, but no red cell casts. |
| Serum Protein and Immuno-Electrophoresis | Alpha-1 globulin of 6.7 (normal 2.5-4.5 ), beta globulin 14.1 (normal 8-12), and gamma globulin 25.4 (normal 10-18). IgM 220 (normal 50-350) with IgM kappa monoclonal protein  detected; IgG and IgA were normal. |
| ECG | Sinus tachycardia with left ventricular hypertrophy, and nonspecific ST-T wave changes |
| Abdominal CT Scan | Aortocaval adenopathy and bilaterally enlarged kidneys. |
| ANA/Rheumatoid Factor | ANA was negative; rheumatoid factor was positive. |
| Bone and Joint Radiographs | - |
| Coomb’s Test (AGT) | - |
| Blood Smear | - |
| Haptoglobin | - |
| HIV Antibody | Negative |
| PPD/Anergy Battery | - |
| Blood Cultures | Two blood cultures showed no growth. |
| Urine Culture and Protein Electrophoresis | Total volume of 2,250 ml, protein of 6.9 gm. Negative for Bence-Jones protein. |

|  |  |  |  |
| --- | --- | --- | --- |
| #143  Polymyalgia Rheumatica  Difficulty Rating: 4.0 | Presenting Complaint | - | This 65 year old woman complained of pain in her shoulders, knees, and neck. |
| Patient History | History of Presenting Complaint | The patient had a long history of arthritis for which she was  treated for seven years with non-steroidal anti-inflammatory drugs and dexamethasone. Nine months before her admission she started seeing a new doctor who tapered her steroids over four to six months. In the three weeks prior to admission her joint pain involving the shoulders, knees, and neck became much worse. She mentioned PIP (proximal interphalangeal) joint pain as well. She complained that she could hardly move, and had morning stiffness that improved after a hot bath. She denied joint swelling or redness, but complained of decreased range of motion in her knees and shoulders. She applied analgesic cream occasionally and started using a cane to help with ambulation. She had no rashes, Raynaud phenomenon, sweats, headaches or muscle tenderness. She did not notice any weakness. She also complained of anorexia and had eaten poorly for a long time, but for the previous three weeks had taken only a few mouthfuls at a time. She had been drinking a nutritional supplement milkshake for two weeks. She denied abdominal pain, trouble swallowing, nausea, vomiting or change in her bowel habits. Her weight had fallen from 158 lbs. to 118 lbs. over the past year. Over the same period of time her Hgb had fell from 13.6 to 8.0 g/dl. After starting on iron her Hgb rose to 10 g/dl. |
| Past Medical History | She had a multinodular goiter detected a year prior to admission. She was not on thyroid hormone. She had never been hospitalized  and had had no operations. She did have a history of chronic kidney disease with a creatinine of 2.0 mg/dl. |
| Medications | She had a past history of hypertension and was once on  hydrochlorothiazide and then Furosemide, but was now on no medication. |
| Allergies | None known |
| Family History | No relevant family history |
| Social History | She is married and lives with her husband and a grandson. She does not smoke or drink. She lives on social security. |
| Physical Examination | Take Pulse | 84 |
| Measure Blood Pressure | 102/68 mmHG |
| Assess Respiratory Rate | 22/min |
| Auscultate Lungs | She had no breast masses. The lungs were clear. |
| Auscultate the Heart | The heart sounds were normal without murmurs or gallops. |
| Assess Eyes | She had cataracts bilaterally which made visualization of the retina difficult. The pupils were equal, round, and reactive to light. The conjunctiva were pale. Extraocular movements  were intact. |
| Measure Temperature | 36.7 degrees celsius |
| Abdomen Examination | The abdomen was soft and non-tender with no masses or organomegaly. There were normal bowel sounds. |
| Rectal Examination | There were no rectal masses and the stool was guaiac negative. |
| Neck/Throat Examination | She was edentulous and had no oropharyngeal lesions. The tympanic membranes were normal. She had good range of motion in the neck. There was no jugular venous distention. The right  lobe of the thyroid was enlarged with a question of a nodule. |
| Assess Head | The cranial nerves were intact. Sensation was intact to  position, light touch and vibration. |
| Neurologic Exam Record | She was able to abduct her shoulders only to 90 degrees and had decreased internal and external shoulder rotation. There were bilateral varus deformities at the knees with palpable crepitus and flexion only to 90 degrees. There was slightly diminished  strength throughout but more notable at the deltoids and hip flexors. She could not stand from a sitting position without using her hands. She was alert and oriented. The deep tendon reflexes were 3+ and symmetric, though absent at the ankles. The Babinski's were down going. There was no muscle tenderness. There was no joint tenderness, no effusions, and no  synovial thickening. She did have Heberden's nodes bilaterally. |
| Assess Extremities | There was no peripheral oedema. |
| Generalised  Testing | FBC - Hb | 98 (Normal: 140-180 g/L) |
| FBC - Hct | 30 (Normal: 42-52%) |
| FBC - MCV | 83 (Normal: 84-99 fl) |
| FBC - WBC | 7.5 (Normal: 4.8-10.8 x 109/L) |
| FBC - Neut | 69 (Normal: 40-70%) |
| FBC – Lymph’s | 21 (Normal: 25-45%) |
| FBC – Platelet Count | 582 (Normal: 150-400 x 109/l) |
| Biochemistry - Sodium | 139 (Normal: 135-149 mmol/l) |
| Biochemistry - Potassium | 4.1 (Normal: 3.5-5.3 mmol/l) |
| Biochemistry - Chloride | 106 (Normal: 98-108 mmol/l) |
| Biochemistry – CO2 | 23 (Normal: 24-32 mmol/l) |
| Biochemistry - UREA | 1.4 (Normal: 0.3-1.1 mmol/l) |
| Biochemistry - Creatinine | 176.8 (Normal: 44.2-132.6 µmol/L) |
| Biochemistry - Glucose | 6.1 (Normal: 3.9-6.1 mmol/l) |
| Biochemistry – Protein Total | 72 (Normal: 60-80 g/L) |
| Biochemistry - Albumin | 37 (Normal: 36-500 g/L) |
| Biochemistry – AST (SGOT) | 8 (Normal: 0-50 U/L) |
| Biochemistry - ALP | 81 (Normal: 40-125 U/L) |
| Specialised Testing | Chest X-Ray | Small pleural effusion, mild tracheal deviation to the left and a question of a large thyroid. There were no pulmonary infiltrates. |
| Urinalysis | Trace protein, no glucose, +++ Hgb, 10-15 WBC's per HPF, >100 RBC's per HPF, 10-15 squamous epithelial cells. |
| Serum Protein and Immuno-Electrophoresis | No significant abnormalities. |
| ECG | Normal |
| Abdominal CT Scan | - |
| Sputum Culture/ Gram Stain | - |
| ANA/Rheumatoid Factor | Negative for both |
| Bone and Joint Radiographs | Evidence of osteoarthritis at multiple joints. The patient underwent flexible sigmoidoscopy and was noted to have a 5 mm polyp at 30 cm. A single column barium enema was normal, though a right renal calculus was detected. An OGD  was notable for an active duodenal bulb ulcer. An EMG was non-diagnostic but showed changes of irritation in proximal muscles suggestive of an inflammatory myopathy. |
| Coomb’s Test (AGT) | - |
| Blood Smear | - |
| Haptoglobin | - |
| HIV Antibody | - |
| PPD/Anergy Battery | - |
| Blood Cultures | - |
| Arterial Blood Gas on Room Air | - |
| Urine Culture and Protein Electrophoresis | Negative urine culture and normal electrophoresis. |

|  |  |  |  |
| --- | --- | --- | --- |
| #251  Renal Amyloidosis  Difficulty Rating: 4.83 | Presenting Complaint | - | This 44 year old male presented with swelling of his arms and legs for 3 months. |
| Patient History | History of Presenting Complaint | He had a 14 year history of intravenous drug abuse, having used  IV heroin and cocaine until 6 months prior to admission. Three months prior to admission, he developed swelling of his hands, arms, legs, and genitalia. He noticed dyspnea on exertion after half a block, but denied orthopnea, paroxysmal nocturnal dyspnea, or chest pain. He also denied rash, joint pain, hematuria, or change in urinary volume. He reported gaining 20 pounds  over the past 6 months. |
| Past Medical History | Two years prior to admission, he was found to have an abnormal  chest x-ray. A lung biopsy showed pulmonary fibrosis. There was no history of exposure to tuberculosis. There was no history of hypertension, heart disease, liver disease, or kidney disease. |
| Medications | None |
| Allergies | None |
| Family History | No relevant family history |
| Social History | He has worked for 16 years as a sand blaster and brass polisher. He drank alcohol heavily until 9 years prior to admission. |
| Physical Examination | Take Pulse | 86 |
| Measure Blood Pressure | 130/80 mmHG |
| Assess Respiratory Rate | 20/min |
| Auscultate Lungs | The lungs showed percussion dullness and decreased breath sounds at the right base, with crackles above the area of dullness. |
| Auscultate the Heart | Cardiac examination revealed normal S1 and S2, without S3 or S4 gallop. There was a II/VI systolic ejection  murmur at the apex. |
| Assess Eyes | The conjunctivae were pink. The sclerae were  non-icteric. The pupils were equal, round, and reactive to light and accommodation. |
| Measure Temperature | 37 degrees celsius |
| Abdomen Examination | The abdomen was soft, with normoactive bowel sounds. The liver was 16 cm in the midclavicular line, and extended 4 cm below the right costal margin. The spleen was not palpable. |
| Rectal Examination | Rectal examination was normal. |
| Neck/Throat Examination | There was a yellow plaque on the tongue. The neck was supple, without jugular venous distention or thyromegaly.  The carotid upstrokes were normal. There was no lymphadenopathy. |
| Assess Head | The head was normocephalic and atraumatic. |
| Neurologic Exam Record | Normal |
| Assess Extremities | Genital examination revealed penile and scrotal oedema. The lower  extremities showed 4+ oedema to the hip; the upper extremities had 1+ oedema of the hands and arms, with multiple needle tracks and healed skin abscesses. |
| Generalised  Testing | FBC - Hb | 154 (Normal: 140-180 g/L) |
| FBC - Hct | 47.9 (Normal: 42-52%) |
| FBC - MCV | 90 (Normal: 84-99 fl) |
| FBC - WBC | 9.2 (Normal: 4.8-10.8 x 109/L) |
| FBC - Neut | 55 (Normal: 40-70%) |
| FBC – Lymph’s | 35 (Normal: 25-45%) |
| FBC – Platelet Count | 200 (Normal: 150-400 x 109/l) |
| Biochemistry - Sodium | 138 (Normal: 135-149 mmol/l) |
| Biochemistry - Potassium | 4.9 (Normal: 3.5-5.3 mmol/l) |
| Biochemistry - Chloride | 107 (Normal: 98-108 mmol/l) |
| Biochemistry – CO2 | 27 (Normal: 24-32 mmol/l) |
| Biochemistry - UREA | 1.1 (Normal: 0.3-1.1 mmol/l) |
| Biochemistry - Creatinine | 168.0 (Normal: 44.2-132.6 µmol/L) |
| Biochemistry - Glucose | 5.6 (Normal: 3.9-6.1 mmol/l) |
| Biochemistry – Protein Total | 61 (Normal: 60-80 g/L) |
| Biochemistry - Albumin | 16 (Normal: 36-500 g/L) |
| Biochemistry – AST (SGOT) | 15 (Normal: 0-50 U/L) |
| Biochemistry - ALP | 81 (Normal: 40-125 U/L) |
| Specialised Testing | Chest X-Ray | Normal sized heart and a right pleural effusion. |
| Urinalysis | pH 8, specific gravity 1.012, protein 3+, and blood 2+; microscopic examination showed 7-12 RBCs, 2-4 WBCs, and no casts. |
| Serum Protein and Immuno-Electrophoresis | albumin of 22.1%, alpha-1 globulin of 4.1%, alpha-2 globulin of 16.4%, a beta globulin of 32.3%, and a gamma globulin of 25.2%; there was no monoclonal spike |
| ECG | - |
| Abdominal CT Scan | - |
| Sputum Culture/ Gram Stain | - |
| ANA/Rheumatoid Factor | Negative for both |
| Bone and Joint Radiographs | - |
| Coomb’s Test (AGT) | - |
| Blood Smear | - |
| Haptoglobin | - |
| HIV Antibody | - |
| PPD/Anergy Battery | - |
| Blood Cultures | No growth |
| Arterial Blood Gas on Room Air | - |
| Urine Culture and Protein Electrophoresis | Volume of 3,100 cc, a creatinine of 35.9, a creatinine clearance of  39 ml/min, and a protein of 9 gm. |

|  |  |  |  |
| --- | --- | --- | --- |
| #291  Gaucher’s Disease  Difficulty Rating: 6.17 | Presenting Complaint | - | This 44 year old male presented with swelling of his arms and legs for 3 months. |
| Patient History | History of Presenting Complaint | The patient was in his usual state of health until 3 months prior to  admission, when he experienced weakness and fatigue. He complained of being continually tired, spent most of his days at home, and required daily naps. His appetite decreased, and he lost 25 pounds. He experienced diffuse abdominal fullness, without relation to meals. He also experienced frequent arthralgias, and pain in his lower back. He denied fevers, sweats, or chills. |
| Past Medical History | He had a history of hypertension. He also had a history of atrial  fibrillation. He had bilateral herniorrhaphies 20 years prior to admission. |
| Medications | Hydrochlorothiazide, Digoxin, Ibuprofen. |
| Allergies | None known |
| Family History | No known familial diseases. |
| Social History | He has smoked 1 ½ packs of cigarettes per day for 40 years. He rarely drinks alcohol. |
| Physical Examination | Take Pulse | 88 |
| Measure Blood Pressure | 130/70 mmHG |
| Assess Respiratory Rate | 16/min |
| Auscultate Lungs | Lungs were clear |
| Auscultate the Heart | Cardiac examination revealed a normal apical impulse, and normal heart sounds, without gallops or murmurs. |
| Assess Eyes | The conjunctivae were slightly pale. The sclerae  were mildly icteric. The pupils were equal, round, and reactive to light and accommodation. The fundi showed mild arteriolar narrowing, without hemorrhages or exudates. |
| Measure Temperature | 37 degrees celsius |
| Abdomen Examination | The abdomen was soft, with normoactive bowel sounds. There was mild right upper quadrant tenderness. The liver was 16 cm in the midclavicular line. The spleen tip was palpable. |
| Rectal Examination | Rectal and genitourinary examinations were normal. The stool was guaiac negative. |
| Neck/Throat Examination | The neck was supple, without  jugular venous distention or thyromegaly. There was no lymphadenopathy. |
| Assess Head | The head was normocephalic and atraumatic. |
| Neurologic Exam Record | Normal |
| Assess Extremities | The extremities showed no cyanosis, clubbing, or oedema. |
| Generalised  Testing | FBC - Hb | 118 (Normal: 140-180 g/L) |
| FBC - Hct | 32.7 (Normal: 42-52%) |
| FBC - MCV | 93 (Normal: 84-99 fl) |
| FBC - WBC | 3.8 (Normal: 4.8-10.8 x 109/L) |
| FBC - Neut | 58 (Normal: 40-70%) |
| FBC – Lymph’s | 35 (Normal: 25-45%) |
| FBC – Platelet Count | 70 (Normal: 150-400 x 109/l) |
| Biochemistry - Sodium | 138 (Normal: 135-149 mmol/l) |
| Biochemistry - Potassium | 4.0 (Normal: 3.5-5.3 mmol/l) |
| Biochemistry - Chloride | 108 (Normal: 98-108 mmol/l) |
| Biochemistry – CO2 | 26 (Normal: 24-32 mmol/l) |
| Biochemistry - UREA | 0.9 (Normal: 0.3-1.1 mmol/L) |
| Biochemistry - Creatinine | 106.1 (Normal: 44.2-132.6 µmol/L) |
| Biochemistry - Glucose | 6.7 (Normal: 3.9-6.1 mmol/L) |
| Biochemistry – Protein Total | 77 (Normal: 60-80 g/L) |
| Biochemistry - Albumin | 43 (Normal: 36-500 g/L) |
| Biochemistry – AST (SGOT) | 53 (Normal: 0-50 U/L) |
| Biochemistry - ALP | 379 (Normal: 40-125 U/L) |
| Specialised Testing | Chest X-Ray | Normal heart and lungs. |
| Urinalysis | Normal |
| Serum Protein and Immuno-Electrophoresis | No monoclonal spikes |
| ECG | - |
| Abdominal CT Scan | Markedly enlarged spleen, and heterogeneous uptake in the liver. |
| Sputum Culture/ Gram Stain | - |
| ANA/Rheumatoid Factor | Negative for both |
| Bone and Joint Radiographs | Normal radiographs of the lumbar spine, hips, and distal femurs |
| Coomb’s Test (AGT) | Negative |
| Blood Smear | - |
| Haptoglobin | 0.7 (normal: 0.1-3.6 g/L) |
| HIV Antibody | - |
| PPD/Anergy Battery | - |
| Blood Cultures | No growth |
| Arterial Blood Gas on Room Air | - |
| Urine Culture and Protein Electrophoresis | Volume of 3,100 cc, a creatinine of 35.9, a creatinine clearance of  39 ml/min, and a protein of 9 gm. |

|  |  |  |  |
| --- | --- | --- | --- |
| #023  Hairy Cell Leukemia  Difficulty Rating: 6.0 | Presenting Complaint | - | 67 year old female presented with shortness of breath. |
| Patient History | History of Presenting Complaint | Two days prior to admission, the patient began to experience shortness of breath and chest pain. The pain was worsened by coughing and deep inspiration. The pain did not radiate and was not associated with diaphoresis, nausea or vomiting. She also complained of fever, chills, and a cough productive of yellow sputum. She denied cardiac problems, orthopnea, or PND. There was no tuberculosis exposure. |
| Past Medical History | This patient had a history of type II diabetes, arthritis,  anxiety and was in her usual state of health until two days prior. She was previously hospitalized for a depressive reaction and was started then on amitriptyline which she continued up to the time of admission at a dose of 75 mg qhs. For menopausal symptoms she was taking Premarin .625 mg/day and Provera 2.5 mg/day. Her diabetes is diet controlled. |
| Medications | None currently |
| Allergies | None known |
| Family History | The family history was positive for diabetes in an older sister. There  was no family history of cancer, heart problems, or strokes. |
| Social History | She quit smoking 30 years ago. She does not drink. She lives by  herself and has two children. She is not working. |
| Physical Examination | Take Pulse | 108 |
| Measure Blood Pressure | 140/80 mmHG |
| Assess Respiratory Rate | 24/min |
| Auscultate Lungs | There were bilateral basilar crackles going half way up with no evidence of consolidation. |
| Auscultate the Heart | The heart sounds were normal; there was a 2/6 systolic ejection murmur. |
| Assess Eyes | The extraocular movements were intact. The pupils were equally round and reactive to light. The fundi were normal. |
| Measure Temperature | 39.2 degrees celsius |
| Abdomen Examination | The abdomen was soft. The spleen was palpable 6cm below the left costal margin; there was no hepatomegaly. There were no masses. |
| Rectal Examination | Rectal and genitourinary examinations were normal. The stool was guaiac negative. |
| Neck/Throat Examination | The oropharynx showed no erythema and no exudate. There was no  meningismus and no thyromegaly. There was no lymphadenopathy. |
| Assess Head | The head was normocephalic and atraumatic. |
| Neurologic Exam Record | The neurologic exam including mental status, cranial nerves, strength and sensation was normal. |
| Assess Extremities | There was 1+ pitting oedema. |
| Generalised  Testing | FBC - Hb | 115 (Normal: 140-180 g/L) |
| FBC - Hct | 35 (Normal: 42-52%) |
| FBC - MCV | 93 (Normal: 84-99 fl) |
| FBC - WBC | 5.9 (Normal: 4.8-10.8 x 109/L) |
| FBC - Neut | 56 (Normal: 40-70%) |
| FBC – Lymph’s | 27 (Normal: 25-45%) |
| FBC – Platelet Count | 121 (Normal: 150-400 x 109/l) |
| Biochemistry - Sodium | 140 (Normal: 135-149 mmol/l) |
| Biochemistry - Potassium | 4.5 (Normal: 3.5-5.3 mmol/l) |
| Biochemistry - Chloride | 106 (Normal: 98-108 mmol/l) |
| Biochemistry – CO2 | 23 (Normal: 24-32 mmol/l) |
| Biochemistry - UREA | 1.0 (Normal: 0.3-1.1 mmol/L) |
| Biochemistry - Creatinine | 123.8 (Normal: 44.2-132.6 µmol/L) |
| Biochemistry - Glucose | 10.4 (Normal: 3.9-6.1 mmol/L) |
| Biochemistry – Protein Total | 71 (Normal: 60-80 g/L) |
| Biochemistry - Albumin | 27 (Normal: 36-500 g/L) |
| Biochemistry – AST (SGOT) | 27 (Normal: 0-50 U/L) |
| Biochemistry - ALP | 103 (Normal: 40-125 U/L) |
| Specialised Testing | Chest X-Ray | Bilateral basal infiltrates. |
| Urinalysis | - |
| Serum Protein and Immuno-Electrophoresis | - |
| ECG | - |
| Abdominal CT Scan | - |
| Sputum Culture/ Gram Stain | Many polymorphonuclear cells and gram positive diplococci. |
| ANA/Rheumatoid Factor | - |
| Bone and Joint Radiographs | - |
| Coomb’s Test (AGT) | Negative |
| Blood Smear | Dohle bodies, toxic granulation, and atypical lymphocytes. |
| Haptoglobin | 70.3 (normal: 13-363 mg/dl) |
| HIV Antibody | - |
| PPD/Anergy Battery | - |
| Blood Cultures | - |
| Arterial Blood Gas on Room Air | pH 7.57 (Normal: 7.35-7.45), pCO2 4.1 (Normal: 4.7-6.0 kPa), pO2 5.6 (Normal: 10.7-14.7 mmHg) |
| Urine Culture and Protein Electrophoresis | - |

|  |  |  |  |
| --- | --- | --- | --- |
| #181  Giant Cell Arteritis  Difficulty Rating: 5.17 | Presenting Complaint | - | 68 year old male presented with fever and arthralgias. |
| Patient History | History of Presenting Complaint | The patient was well until 4 weeks prior to admission when he  developed arthralgias in his wrists and shoulders. He also developed fatigue. He began taking ibuprofen, but developed abdominal pain and an upper gastrointestinal bleed. Oesophagoduodenogastroscopy showed several gastric ulcers, and he was treated with ranitidine. One week prior to admission, the arthralgias again worsened, and he developed fever. He denied joint swelling, rash, headache, chest pain, abdominal pain, or history of anemia. |
| Past Medical History | No prior illnesses or hospitalizations. |
| Medications | Disalcid, ranitidine. |
| Allergies | None known |
| Family History | Noncontributory |
| Social History | He is divorced, and lives alone. He denied tobacco, alcohol, or illicit drug use. |
| Physical Examination | Take Pulse | 120 |
| Measure Blood Pressure | 110/60 mmHG |
| Assess Respiratory Rate | 20/min |
| Auscultate Lungs | Lungs are clear. |
| Auscultate the Heart | The heart had normal S1 and S2, no gallops, and no murmurs. |
| Assess Eyes | The conjunctivae were pale. The sclerae were anicteric. The pupils were equal, round, and reactive to light and accommodation. The fundi were normal. |
| Measure Temperature | 38.9 degrees celsius |
| Abdomen Examination | The abdomen was soft, without tenderness. There was no hepatosplenomegaly or masses. |
| Rectal Examination | Rectal examination was normal; the stool was guaiac negative. |
| Neck/Throat Examination | The oropharynx was benign. The neck was supple. There was no lymphadenopathy or thyromegaly. |
| Assess Head | Evidence of bitemporal wasting |
| Neurologic Exam Record | The neurologic exam including mental status, cranial nerves, strength and sensation was normal. |
| Assess Extremities | The extremities showed no joint swelling; there  was pain in the shoulders on abduction to 90 degrees. There was no cyanosis, clubbing, or oedema. |
| Generalised  Testing | FBC - Hb | 93 (Normal: 140-180 g/L) |
| FBC - Hct | 28.2 (Normal: 42-52%) |
| FBC - MCV | 73.9 (Normal: 84-99 fl) |
| FBC - WBC | 9.2 (Normal: 4.8-10.8 x 109/L) |
| FBC - Neut | 73 (Normal: 40-70%) |
| FBC – Lymph’s | 14 (Normal: 25-45%) |
| FBC – Platelet Count | 390 (Normal: 150-400 x 109/l) |
| Biochemistry - Sodium | 139 (Normal: 135-149 mmol/l) |
| Biochemistry - Potassium | 4.4 (Normal: 3.5-5.3 mmol/l) |
| Biochemistry - Chloride | 101 (Normal: 98-108 mmol/l) |
| Biochemistry – CO2 | 25 (Normal: 24-32 mmol/l) |
| Biochemistry - UREA | 0.8 (Normal: 0.3-1.1 mmol/L) |
| Biochemistry - Creatinine | 88.4 (Normal: 44.2-132.6 µmol/L) |
| Biochemistry - Glucose | 5.1 (Normal: 3.9-6.1 mmol/L) |
| Biochemistry – Protein Total | 66 (Normal: 60-80 g/L) |
| Biochemistry - Albumin | 22 (Normal: 36-500 g/L) |
| Biochemistry – AST (SGOT) | 35 (Normal: 0-50 U/L) |
| Biochemistry - ALP | 97 (Normal: 40-125 U/L) |
| Specialised Testing | Chest X-Ray | Normal heart and lungs |
| Urinalysis | No protein or blood; microscopic examination normal. |
| Serum Protein and Immuno-Electrophoresis | No monoclonal spike, normal immunoelectrophoresis |
| ECG | Sinus tachycardia, but was otherwise normal. |
| Abdominal CT Scan | Unremarkable |
| Sputum Culture/ Gram Stain | - |
| ANA/Rheumatoid Factor | ANA positive at 1:40, negative RF |
| Bone and Joint Radiographs | Bone marrow biopsy shows normal hematopoietic cell lines and stainable iron; culture for bacteria, acid-fast  bacilli, and fungi were negative. |
| Coomb’s Test (AGT) | - |
| Blood Smear | - |
| Haptoglobin | - |
| HIV Antibody | Negative |
| PPD/Anergy Battery | Negative PPD. No reaction to mumps or Candida antigens. |
| Blood Cultures | 8x showed no growth |
| Arterial Blood Gas on Room Air | - |
| Urine Culture and Protein Electrophoresis | - |