Cushing Syndrome Case Study and Diagnosis

Posted on September 17, 2019

Physical Exam

A physical exam is part of the investigative procedures carried out by the clinician in order to come up with the correct diagnosis. Coupled with the history and other diagnostic procedures like imaging, the doctor is able to come up with an appropriate treatment plan by eliminating the actual cause of a disease. The components of the physical examination include inspection, palpation, percussion, and auscultation. The inspection involves an observation of the patient for any abnormal behaviour or patterns that are suggestive of some aspects of the disease. Palpation involves the manipulation of the site of the lesion to elicit tenderness, consistency, and mobility. Percussion involves creating a resonance that gives a suggestion of the contents of a cavity. Auscultation is the use of a stethoscope to detect the motility of internal body organs. The components of the physical exam are applied according to the system being examined (Haring, 2013).

Blood Pressure Assessment

Blood pressure is measured using a sphygmomanometer. The readings of the sphygmomanometer appear as a numerator and a denominator. The numerator indicates the value of systolic pressure, while the denominator shows the diastolic pressure. The values of this measurement s indicate the blood pressure of the person being assessed. The normal value of systolic blood pressure is between 90-130mmHg, and diastolic pressure is between 60-90mmHg in adults. A higher value is an indicator of hypertension, and a lower value for hypotension. Mr Smith has a blood pressure of 160/100mmHg. Both the systolic and diastolic values are higher than the normal values and are, therefore, hypertensive. The conclusion is arrived at by comparing the values obtained with the known normal values in adults.

Laboratory Tests Carried Out

The samples collected from the patient included blood and urine. The blood was analyzed in a blood test aimed at quantifying the different components of blood. The blood cells and mineral content of the blood are obtained through this test. A hormone profile was also carried out with special interest on the hormone released by the adrenal glands or due to the stimulation of other organs due to adrenal hormones stimulation. Urine was also analyzed for different components, including mineral content and hormone levels. The doctor requested a blood hormone profile to gauge the effects of the

adenocarcinoma. It is a type of cancer that distorts the hormone levels in the blood depending on the glandular cell type of a tumour. The doctor expected to find elevated ACTH and cortisol levels due to the ectopic production of the hormones by a tumour.

Analysis Of Mr. Smith's Test Results

The potassium level in the blood is within the normal range. His haemoglobin content in the blood is below the normal range. The deviation is an indicator of moderate anaemia. The hematocrit levels are way below normal, with a value of 20.4%, while the normal range is between 45-52%. The platelet count is also below the normal range. The concentration of bicarbonate ions in the blood is higher than normal, with a value of 38mmol/l and the normal levels being 22-26mmol/l. Urinary potassium ions level is within normal range. Blood glucose level is elevated to 460mg/dl of blood from the normal range of between 64.4- 104.4mg/dl. Serum aldosterone level is lower than the normal range, while its level in urine is within the normal range. The serum levels of renin are also within normal range while the levels of cortisol and ACTH are elevated. The level of ACTH is elevated to 1082pg/ml from the normal range of between 9-46pg/ml. The level of cortisol is elevated to 155.5mg/dl from the normal range of 0-25mg/dl.

Imaging Procedures Conducted

The imaging procedures conducted in the case scenario included magnetic imaging and a computed tomography scan. MRI is a technique that uses strong magnetic and electric fields to generate images of inner body organs. Generating the images of inner tissue serves as a confirmatory test for the disease in tissue. The CT scan, on the other hand, uses many computer-processed x-ray combinations to provide a cross-sectional view of specific areas of the target organ. The CT scan gives the physician the chance to see the internal cross-sectional contents of a body organ without having to cut it literally. The difference between the two techniques is mainly in the media used to produce the images. The MRI uses magnetic and electric fields, while the CT scan uses X-rays. The images obtained are also different, with the CT scan giving the cross-sectional view of an organ while the MRI gives different images depending on the contrast used. The similarity between the two techniques is the ability to obtain images of internal organs without the use of invasive techniques.

Metastatic

Metastatic is a term used in cancer to imply the ability of the diseased cells to invade other organs other than the originally affected organ. The laboratory findings confirmed the presence of too much cortisol and ACTH due to the presence of ectopic sources of the hormones. The imaging confirmed MRI and CT scans confirmed the presence of metastatic prostate adenocarcinoma. The use of scientific methods in confirming the diagnosis remains a vital part of care for all healthcare

professionals (Wians, 2015).

References

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