ENGLISH 183 READING PRACTICE - Pheochromocytoma

Read the following article and **answer** the **questions** that follow.
Refer to the 'Keys' section to check your answers.

Pheochromocytoma is a tumor on the medulla of the adrenal gland that produces excess adrenaline. It can be a deadly tumour because of the severe elevation in blood pressure it causes. It usually is not cancerous, but may be associated with cancerous tumours in other endocrine glands, such as the thyroid.

The adrenal glands are triangular-shaped endocrine glands that are located on the top of both kidneys. Each gland consists of a medulla that is surrounded by the cortex. The medulla is responsible for producing epinephrine also known as adrenaline. Disorders of either the cortex or the medulla can result in hypertension.

Men and women are equally susceptible to pheochromocytoma. It can occur at any age, but is most common in people between the ages of 40 and 60. Ninety percent of cases are sporadic. However, 10 percent can be linked to hereditary causes.

The majority of patients with pheochromocytoma experience hypertension. Only 15 to 20 percent of patients have normal blood pressure. Many patients experience the three classic symptoms of headache, profuse sweating and palpitations. In fact, hypertensive patients with this **triad** have more than a 90 percent chance of having a pheochromocytoma, whereas individuals with none of these characteristics have less than 1 percent incidence of pheochromocytoma. Other symptoms include anxiety, chest pain, abdominal pain, fatigue, weight loss, vision problems and seizures.

The early diagnosis of pheochromocytoma is important not only because it offers the possibility of curing high blood pressure, but also, if left untreated, it can become a lethal condition. If pheochromocytoma is suspected, there are some standard tests that are initially performed, including a 24-hour blood and urine test to measure the levels of organic compounds secreted by the adrenal glands. There is also a biochemical analysis that tests the levels of these same compounds in the patient's

plasma. If these tests reveal elevated levels of adrenal secretions, there are three major imaging studies to locate a pheochromocytoma: CT scan, MRI and MIBG scanning.

Standard treatment for pheochromocytoma is surgical removal of the tumour. Before surgery, medications, such as alpha-adrenergic blockers, are given to block the effect of hormones and normalize blood pressure.

Laparoscopic surgery is a minimally **invasive** procedure performed under anesthesia. Three to four small incisions are made in the abdomen, the laparoscope and other instruments are inserted through the incisions and the tumor is removed. If the patient's blood pressure is well-controlled, then the hospital stay is only one to two days, and the patient may return to normal activities within two weeks.

After removal of the pheochromocytoma, 27 to 38 percent of patients still suffer from hypertension. In the long run, it appears that response to surgical therapy depends on whether the hypertension was **sporadic** or long lasting. Up to 95 percent of patients with a history of sporadic hypertension respond to surgery, while only 75 percent of those who suffer from long-lasting hypertension show improvement.

Long-term follow up of all patients is important because recurrent or metastatic disease may develop in the future. Follow-up exams are recommended at three and six months after surgery. The five-year survival rate after removal of benign pheochromocytoma has ranged from 84 to 96 percent.

Adapted from Pheochromocytoma - National Cancer Institute

1. Pheochromocytoma may be deadly because _____.

a. it is usually benign
b. it causes severe hypertension
c. it always causes cancer
d. all of the above

2. The patient most susceptible to pheochromocytoma is a _____.

a. 20-year-old woman
b. 30-year-old man
c. 70-year-old man or woman
d. 50-year-old man

3. 15 to 20% of people who do not suffer from hypertension have pheochromocytoma.

a. true
b. false

4. If you experience headache, profuse sweating, and heart palpitations, but do not have hypertension, then there is a ten percent chance that you have pheochromocytoma.

a. true
b. false

5. Symptoms of pheochromocytoma include _____.

a. anxiety, fatigue, and vision problems
b. abdominal pain, vomiting, and weight loss
c. headache, profuse sweating, and diarrhea
d. anxiety, insomnia, and vision problems

6. Hypertension _____.

a. is always a symptom of pheochromocytoma
b. is a result of pheochromocytoma
c. is the only symptom of pheochromocytoma
d. is the cause of pheochromocytoma

7. Initial tests for pheochromocytoma include _____.

a. a 24-hour blood and urine test and MRI
b. a 24-hour blood and urine test and a biochemical plasma test
c. a 24-hour blood and urine test and biochemical analysis
d. a CT scan, MRI and MIBG scanning

8. Alpha-adrenergic blockers _____.

a. cancel the effect of the adrenal gland secretions
b. temper the effect of the adrenal gland secretions
c. reverse the effect of the adrenal gland secretions
d. enhance the effect of the adrenal gland secretions

9. You can infer that laparoscopic surgery for pheochromocytoma is very complicated and painful for the patient.

a. true
b. false

10. Removal of the pheochromocytoma _____.

a. cures the patient completely
b. alleviates only the symptoms of the disease
c. relieves hypertension in most cases
d. none of the above

11. The success of laparoscopic surgery for pheochromocytoma _____.

a. is not assured
b. may depend on the patient's symptoms before surgery
c. is generally successful
d. all of the above

12. 'triad' (par. 4, line 4) means _____.

a. triage
b. threesome
c. symptom
d. experience

13. 'invasive' (par. 8, line 1) means _____.

a. debilitating
b. limited
c. restricted

d. intrusive

14. 'sporadic' (par.9, line 3) means _____.

a. long-term
b. genetic
c. alleviated
d. isolated

15. From this reading, you can infer that if a patient has experienced long-term hypertension, there is a 25 percent chance that this will not improve after surgery.

a. true
b. false

16. From this reading, you can infer that even after removal of a pheochromocytoma, the patient may suffer from cancerous tumours in other endocrine glands.

a. true
b. false