

READING TEST 22

PART A

TIME: 15 minutes

Look at the four texts, A-D, in the separate Text Booklet.

For each question, 1-20, look through the texts, A-D, to find the relevant information.

Write your answers on the spaces provided in this Question Paper.

Answer all the questions within the 15-minute time limit.

Your answers should be correctly spelt.

Spigelian Hernia - A Case Study

Text A

A Spigelian hernia (SH) is an uncommon hernia comprising 0.12% to 2% of all ventral wall hernias. Adriaan van den Spiegel, a Belgian anatomist, was the first to describe a region known as the Spigelian fascia, which is the aponeurotic layer located between the transverse abdominal muscle medially, and the semilunar line laterally. Consequently, hernias in this region are referred to as SH. These uncommon hernias are difficult to diagnose, and the cases described generally only come from large, specialized centers. Usually the symptoms are nonspecific and therefore a diagnosis based only on the clinical examination is difficult. In 50% of the cases, confirmation of the diagnosis is only possible during surgery. This disease has a higher frequency among women. SH occurs primarily in the 6th-7th decade of life, and most often occur on the left side. Bilateral hernias appear very rarely. The average BMI is around 29-31.50 kg/m². The most commonly accompanying comorbidities include diabetes, peripheral vascular disease, cerebrovascular disease, COPD, coronary heart disease, diabetes, chronic kidney disease, and asthma.

Text B

The semilunar line extends from the cartilage of the VIII-IX rib to the pubic tubercle and is an area of transition of the transverse abdominal muscle fibres into the aponeurosis, whose part located between the semilunar line and the lateral border of the rectus abdominis muscle is called the Spigelian fascia. In the widest part of the fascia, where the inferior epigastric vessels cross, there is a region called the Spigelian zone. The weakest part of the Spigelian fascia is an area where the semilunar line intersects with the arcuate line (Douglas line). This area is weakened by the lack of the posterior sheath of the rectus abdominis muscle. Most hernias arise within the triangle formed by the arcuate line superiorly, the semilunar line laterally and the inferior epigastric vessels inferiorly. Hernias located inferomedially from the vascular bundle are called lower hernias, whereas upper hernias, located superiorly to the navel are rare. 0.7% of the cases have more than one gate. It is also known as the “lateral abdominal hernia” and the “lateral ventral abdominal hernia”. We can also classify a hernia as an intramural hernia - located under the aponeurosis of the external oblique muscle (98% of all cases) or a subcutaneous hernia - where the hernia sac passes through the aponeurosis.

Text C

The etiology is not exactly known. From an embryological point of view the SH may derive from an inherent weakness in the fusion area of the aponeuroses of the abdominal muscles; stemming from their independent and separate development from invading and fusing myotomes within the mesenchyme. The vascular concept assumes that a hernia is formed in places where the vessels and nerves penetrate through the aponeurosis. There is no clear evidence to support the validity of any of the aforementioned concept. It is currently accepted that a multifactorial theory is the most likely. The risk factors include obesity, collagen disorders, chronic obstructive pulmonary disease (COPD) and previous operations. In the presented case, it can be assumed that a hernia was caused by previous surgeries, obesity, and chronic constipation.

Text D

SH may be idiopathic, acquired, congenital, traumatic or iatrogenic a direct consequence of the introduction of a laparoscopic port. It can co-occur with other abdominal hernias, which is suggestive of connective tissue disease. Hernia sacs, most frequently are formed by the peritoneum, however, the aponeurosis of the transverse abdominal muscle may also contribute to the structures constituting the hernia sac. Hernia sacs usually contain a fragment of fatty tissue or a segment of the omentum. It is less of a common occurrence for the hernia contents to enclose tissues such as the appendix, small intestine, colon, stomach, gallbladder, blind gut, Meckel's diverticulum or ovarium. Due to its location, the appendix is usually a component of abdominal hernias located on the right side of the body as was the case in patient. There are approximately 10 cases of the appendix incarcerated in SH described to date. All of these reported cases of SH contained incarcerated appendix were diagnosed as periappendicular mass palpated physically, as inflamed incarcerated appendix reveal in CT scan or in explorative laparotomy. As a result of the non-specific clinical picture of the condition diagnosis is difficult.

Questions 1-7

For each question, 1-7, decide which text (A, B, C or D) the information comes from. You may use any letter more than once.

In which text can you find information about;

1. In some cases, hernias may appear through different routes.

Answer _____

2. Relating to or denoting any disease or condition which arises spontaneously or for which the cause is unknown.

Answer _____

3. Common reason why hernia appears.

Answer _____

4 .Talking about theory.

Answer _____

5. Presence of one or more additional diseases or disorders co-occurring with a primary disease or disorder.

Answer _____

6. Cases related to surgery previously performed.

Answer _____

7. Unknown reasons which lead to the development of the disease.

Answer _____

Questions 8-14

Answer each of the questions, 8-14, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

8. What is the word used to describe systemic autoimmune diseases?

Answer _____

9 .How would you define lower hernias?

Answer _____

10 .What is the terms which may mean relating to illness caused by medical examination or treatment?

Answer _____

11. What is the word which means confined or imprison?

Answer _____

12 .What defines a wide region superiorly from the interspinous line?

Answer _____

13. What is referred to as a sheet of pearly white fibrous tissue which takes the place of a tendon in sheet-like muscles having a wide area of attachment?

Answer _____

14. What is the development pattern of SH?

Answer _____

Questions 15-20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

15. _____ is a fold of peritoneum connecting the stomach with other abdominal organs

16. _____ is a condition in which sac will travel through the fibrous tissue

17. The _____ is referred to as semilunar line.

18. _____ in most of the cases lays the foundation for the Hernia sacs,

19 .Often, it is difficult to diagnose because the symptoms can be more _____ in nature.

20. The appendix is usually a component of _____.

PART B

In this part of the test, there are six short extracts relating to the work of health professionals. For questions 1-6, choose the answer (A, B or C) which you think fits best according to the text.

1 The notice gives more information about;

Pain in general and its outcome.

Effectiveness in BFA performance.

Implications for clinical effectiveness.

Clinical Overview

Pain is associated with decreased quality of life and is one of the most common presenting symptoms in PC. However, it remains poorly understood and traditional, pharmacologically-based treatment approaches are fraught with complications. Thus, offering patients effective non-pharmacological options for pain relief should be a priority. BFA has the potential to help patients but, given the high prevalence of patients with chronic non-cancer pain, competing for medical comorbidities and the need to maintain access to health care providers, implementation of novel, non-traditional venues should be considered. We have described a well-received and efficient manner in which to offer an integrative modality within the context of a busy PC practice. Potential barriers that we were able to overcome included finding adequate space for a group of this size, obtaining training in BFA and institutional credentialing, and developing an efficient manner in which to perform BFA. Ultimately, our clinical results are limited by our self-selected patient population and the lack of a comparison group and longer term follow-up to ascertain the durability of response. However, our

preliminary results suggest that BFA performed in a group setting at a VA institution appears effective for short-term pain reduction.

2 The given notice talks more about

How hypoxia interferes with T lymphocyte effector function

formation of lymphoid organ

effects of hypoxia

Hypoxia Effects

When evaluating the effects of hypoxia on T-cell function, it is critical to separate the intrinsic effects of alterations to hypoxia-sensing pathways and associated downstream signaling from the extrinsic effects of immersion in a hypoxia microenvironment in vivo. T cells activate HIF-1 α independently of external hypoxia as a consequence of T-cell receptor activation via a PI3K/mTOR dependent pathway. T-cell receptor-activated T cells also increased HIF-1 α mRNA synthesis by mechanisms involving protein kinase C and Ca (2+)/calcineurin. Independently of T-cell receptor stimulation, HIF-1 α mRNA is augmented in T cells in the presence of transforming growth factor- β (TGF- β) and/or interleukin-6 (IL-6) by a mechanism involving STAT3. In physiologic conditions, CD8⁺ T cells from lymphoid organs (spleen, lymph nodes) were found to bind pimonidazole, indicating a hypoxic state within these organs ranging from 1 to 2.5% pO₂. While T cells were functional under these conditions, overall levels of activation were higher in more oxygenated areas.

3 What the given notice indicate:?

Role of key players in the immunologic antitumor response

Role of key players is not completely known

Role of metabolism

Cancer cells

Cancer cells reprogram their metabolism to rely primarily on glycolysis even in the presence of oxygen. This shift to aerobic glycolysis with lactate production, which is referred to as the Warburg effect, is now emerging as a hallmark of cancer. The altered metabolism allows cancer cells to convert efficiently glucose into macromolecules needed to sustain higher proliferative rates and consequently results in lactate accumulation in the tumor microenvironment. Currently, lactate is regarded as a tumor-promoting factor. Lactate accumulation in tumors has been associated with higher incidence of metastases as well as an overall reduced survival rate of the cancer patients. Previous work has strongly implicated that lactate is able to suppress antitumor immunity through inactivation of cytotoxic T lymphocytes. However, it is uncertain how the function goes on.

4 What is correct, according to the figure?

Only six of 42 patients contacted on day 7 (14.3%) reported increased pain 7 days after BFA treatment.

The mean \pm SD pain scores at the start were 7.3 ± 2.0 .

At day 1 and day 7, the mean pain scores were 4.4 ± 2.4 and 5.7 ± 2.6 ,

5 What is correct as per the given notice?

There has been some improvement in the way the patients used to take health medicine

treatment by effective means have decreased mortality rate

Nutrient restriction has got the potential to change signaling routes.

Glioblastoma (GBM)

Glioblastoma (GBM) is a highly aggressive brain tumor and the most commonly occurring primary malignant glioma in adults, accounting for approximately 50% of all primary malignant brain tumor diagnoses. Standard of care consists of surgical resection, concurrent radiation and chemotherapy, followed by adjuvant chemotherapy. While this treatment has extended the average survival to 14.6 months and increased 2 year survival to 17%, the overall prognosis still remains poor. GBM has proven difficult to treat due to tumor heterogeneity and the presence of tumor microenvironments such as low pH, oxygen, and nutrients. Initially described as the Warburg Effect, tumor cells can activate alternative metabolic pathways for production of ATP and biomolecules to circumvent microenvironmental obstacles and fuel tumor growth. Nutrient restriction, just as in many cases that we discover understand that is a modulator of the cellular metabolic state and can alter the kinase signaling pathways in the cell, with glucose playing a key role as a precursor for protein, nucleic acid, and lipid synthesis.

6 The given data best reflects

statistical significant differences in protein between tumor and normal tests which was used

Total of 21 patients were included in the study

Fibronectin levels were quantified from both the tumour tissue and the adjacent normal kidney tissue

	Clinicopathological variables	
	Number of patients (n = 21)	Percentage of patients percentage of patients
Age (n = 21)		
< 50	6	28.57
50-60	8	38.1
60-70	4	19.05
> 70	3	14.28
Sex (n = 21)		
Male	14	66.67
Female	7	33.33

Surgery (n = 21)		
Partial nephrectomy	10	47.61
Radical nephrectomy	11	52.39
Histology type by H & E staining (n = 21)		
Clear cell carcinoma	15	71.43
Papillary carcinoma	3	14.29
Chromophobe carcinoma	2	9.52
Others / Multilocular cystic renal cell neoplasm	1	4.76
Furhmann's grade by H & E staining (n = 19)		
1	1	5.26
2	12	63.16
3	6	31.58
T - Primary tumour (n = 21)		
T1a	5	23.81
T1b	9	42.86
T2b	2	9.52
T3a	5	23.81
Lymph node metastasis (n = 21)		

Absent	21	100
Distant metastasis (n = 21)		
Absent	20	95.24
Present	1	4.76
Stage (n = 21)		
I	14	66.67
II	2	9.52
III	4	19.05
IV	1	4.76
Tumour stroma percentage / TSP (n = 21)		
< 10%	20	95.24
> 50%	1	4.76

PART C

In this part of the test, there are two texts about different aspects of healthcare. For questions 7-22, choose the answer (A, B, C or D) which you think fits best according to the text.

Text 1: Idiopathic Pulmonary Fibrosis (IPF)

Idiopathic pulmonary fibrosis (IPF) is a build-up of scar tissue in the lungs. This scar tissue damages the lungs and makes it hard for oxygen to get in. Not getting enough oxygen to the body can cause serious health problems and even death.

“Idiopathic” is the term used when no cause for the scarring can be found; in these cases, doctors think the scarring starts with something that injures the lung. Scar tissue builds up as the lungs try to repair the injury and, in time, so much scarring forms that patients have problems breathing. IPF usually worsens over time.

However, while some patients get sick quickly, others may not feel sick for years. Unfortunately, there is no cure for IPF, but there are treatments that may be able to slow down the lung scarring. Understanding the condition will go a long way to help you cope with the effects it has on your body.

The two major symptoms of IPF are shortness of breath and a persistent cough. Other symptoms may include Fatigue and weakness, Chest pain or tightness in the chest, Loss of appetite, Rapid weight loss etc. The causes of IPF are unknown.

There are other conditions that cause lung scarring; the lung scarring that is the result of other conditions is often called “pulmonary fibrosis”, but should be called by the name of the cause. These other causes include the following:

Diseases, like rheumatoid arthritis and sarcoidosis, Medicines, such as those used for certain heart conditions, Breathing in mineral dusts, such as asbestos or silica, Allergies or overexposure to dusts, animals, or molds (There are many names for this condition, such as “bird breeder’s lung,” “farmer’s lung,” or “humidifier lung.” These conditions are all called hypersensitivity pneumonitis).

Five million people worldwide have IPF, and it is estimated that up to 200,000 people in the United States have this condition. It usually occurs in adults between 40 and 90 years of age and it is seen more often in men than in women. Although rare, IPF can sometimes run in families. Patients who have any symptoms of IPF should see a pulmonologist to rule out similar conditions. The doctor will take a number of tests, including: Breathing tests: to measure how well your lungs are working, CT scan: to get a detailed image of your lungs, and to see if scarring has started, Blood tests: to see if you have an infection, problems with your immune system, or to see how much oxygen is in your blood, Bronchoscopy: to test a small sample of lung tissue. A tube is inserted through the nose or mouth into the lung; a light on the end of the tube lets the doctor see where to go. The doctor then takes a small piece of lung tissue to be tested (this is called a biopsy). You usually do not need to stay overnight in the hospital to have this done, Thoracoscopic biopsy: to obtain larger tissue samples. This is a surgical procedure in which small incisions are made in between the ribs. It usually requires a hospital stay and general anesthesia.

Once lung scarring forms, it cannot be removed surgically and there are currently no medications that remove lung scarring. However, there are treatments, such as the ones that follow, that may be able to help. Cigarette smoke not only damages the lining of the lungs, it can also make you more likely to get a lung infection. While some studies suggest that patients with IPF who smoke actually live longer, these studies are not accepted by everyone, and most experts agree that you should stop smoking. As lung scarring gets worse, many patients need extra oxygen to help them go about their daily lives without getting too out of breath. You get this oxygen from a tank that you carry around with you and, in later stages of IPF, oxygen may be needed even while sleeping or resting. Oxygen is not addictive, so you do not have to worry about using it too much. To help maintain your oxygen levels, ask your doctor about a small, easy-to-use device called a pulse oximeter. This device helps you to know just how much oxygen you require, especially during activity.

Regular exercise can help patients with IPF. Staying in shape not only keeps your breathing muscles strong, it also gives you more energy; this is because healthy

muscles need less oxygen to perform. Many patients with IPF lose weight because of their disease. If you lose too much weight, your breathing muscles can become weak and you also may not be able to fight off infections very well. A well-balanced diet is important to keep up your strength, but be wary of supplements and other nutrition treatments that claim to improve IPF; it's best to consult a doctor first.

Text 1: Questions 7-14

Idiopathic Pulmonary Fibrosis (IPF)

7 .In IPF, patients

will have lung cancer

will have difficulty in inhalation or exhalation

will find it difficult to move

require less oxygen

8 .Scar tissue develops

when oxygen supplied is stopped

when the lungs do not function properly

when the lungs try to repair the damage done

when there is more oxygen supply

9. Major symptoms of IPF are

fatigue and weakness

chest pain and breathing

breathing problems and coughing

breathing problems and weakness

10. The cause of lung scarring is

still not known completely

still not known completely

allergies

some of the common heart diseases

11. One of the simple IPF tests is

bronchoscopy

blood test

CT scan

breathing test to identify how well your lungs work

12. For lung scarring

no medication is available

medication is available

prevention is better

not given

13. Cessation means

to continue

to cease

to adopt

to gain

14 Exercises can help fight the IPF

true

false

sometimes true and sometimes false

can't say

Text 2: Hyperthyroidism

The thyroid gland is a butterfly-shaped endocrine gland that is normally located in the lower front of the neck. The thyroid's job is to make thyroid hormones, which are secreted into the blood and then carried to every tissue in the body. The thyroid hormone helps the body use energy, stay warm and keep the brain, heart, muscles, and other organs working as they should. The term hyperthyroidism refers to any condition in which there are too many thyroid hormones produced in the body. In other words, the thyroid gland is overactive and working too hard. Another term that you might hear being used to describe the problem is thyrotoxicosis, which refers to high thyroid hormone levels in the bloodstream, irrespective of their source.

The thyroid hormone plays a significant role in the pace of many processes in the body; these processes are called your metabolism. If there is too much thyroid hormone being produced, every function of the body tends to speed up. It is not surprising then that some of the symptoms of hyperthyroidism are: nervousness, irritability, increased perspiration, heart racing, hand tremors, anxiety, difficulty sleeping, thinning of your skin, fine brittle hair and weakness in your muscles—especially in the upper arms and thighs. Another symptom might be more frequent bowel movements, but diarrhea is uncommon. You may lose weight despite a good appetite and, for women, menstrual flow may lighten and menstrual periods may

occur less often. Since hyperthyroidism increases your metabolism, many individuals initially have a lot of energy. However, as the hyperthyroidism continues, the body tends to break down, so feeling tired is very common.

Hyperthyroidism usually begins quite slowly but in some young patients these changes can be very abrupt. At first, the symptoms may be mistaken for simple nervousness due to stress. If you have been trying to lose weight by dieting, you may be pleased with your success until the hyperthyroidism, which has quickened the weight loss, causes other problems. The most common cause (in more than 70% of people) is an overproduction of the thyroid hormone by the entire thyroid gland. This condition is also known as Graves' disease. Graves' disease is caused by antibodies in the blood that turn on the thyroid and cause it to grow and secrete too much thyroid hormone. This type of hyperthyroidism tends to run in families and it occurs more often in young women. Little is known about why specific individuals get this disease.

Another type of hyperthyroidism is characterized by one or more nodules or lumps in the thyroid that may gradually grow and increase their activity; this causes the total output of thyroid hormones into the blood to become greater than normal. This condition is known as toxic nodular or multinodular goiter. Also, people may temporarily have symptoms of hyperthyroidism if they have a condition called thyroiditis, a condition caused by a problem with the immune system or a viral infection that causes the gland to leak stored thyroid hormone. The same symptoms can also occur by taking too much thyroid hormone in tablet form. These last two forms of excess thyroid hormone are only called thyrotoxicosis, since the thyroid is not overactive.

If your physician suspects that you have hyperthyroidism, diagnosis is usually a simple matter. A physical examination usually detects an enlarged thyroid gland and a rapid pulse. The physician will also look for moist, smooth skin and a tremor of your fingertips. Your reflexes are likely to be fast, and your eyes may have some abnormalities if you have Graves' disease. The diagnosis of hyperthyroidism will be confirmed by laboratory tests that measure the number of thyroid hormones—thyroxine (T4), triiodothyronine (T3) and thyroid-stimulating hormone (TSH) in

your blood. A high level of thyroid hormones in the blood plus a low level of TSH is common with an overactive thyroid gland. If blood tests show that your thyroid is overactive, your doctor may want to obtain a picture of your thyroid (a thyroid scan). The scan will find out if your entire thyroid gland is overactive or whether you have a toxic nodular goiter or thyroiditis (thyroid inflammation). A test that measures the ability of the gland to collect iodine (a thyroid uptake) may be done at the same time.

No single treatment is best for all patients with hyperthyroidism. The appropriate choice of treatment will be influenced by your age, the type of hyperthyroidism that you have, the severity of your hyperthyroidism, and any other medical conditions that may be affecting your health, as well as your own preference. It may be a good idea to consult with an endocrinologist who is experienced in the treatment of hyperthyroid patients. If you are unconvinced or unclear about any thyroid treatment plan, a second opinion is a good idea.

Text 2: Questions 15-22

15 The thyroid hormone helps with;

Energy consumption

Utilization of energy

Maintaining body temperature

Enhancing the functions of the kidney

16 In thyrotoxicosis the thyroid gland;

Is inactive

Is less active

Produces a greater amount of hormones than necessary

None of the above

17 An increase in the amount of thyroid hormones can;

Boost up other hormonal functions

Improve metabolic functions

Increase normal physiological functions

Increase pulse rate

18 Which one of these is common in thyroid diseases?

Loss of appetite

Decreased metabolism

Tiredness

None of the above

19 Hyperthyroidism can be the cause of

High blood pressure

Tiredness

Weight loss

Increase in weight, even while dieting

20 According to the information given, "Grave's disease" occurs more commonly in;

Men

Women

Children

Adult women

21 Which one of the following suggests an overactive thyroid gland?

Low level of TSH

High level of thyroid hormones

High level of TSH and low level of hormones

High level of hormones and low level of TSH

22 According to the information given, treatment for hyperthyroidism depends more on;

Age

Only on the type of hyperthyroidism

The previous medical history of the patient

Age and type of hyperthyroidism