

Picture quiz – Answers

Answer 1

- 1.a) Left upper motor neuron facial palsy with unilateral exophthalmos
- 1.b) Thyrotoxicosis causing atrial fibrillation causing an embolic stroke

Thyrotoxicosis, characterized by excessive thyroid hormone levels, can lead to serious complications such as atrial fibrillation (AF) and subsequent embolic strokes. In cases where unilateral exophthalmos is present, it often indicates Graves' disease, a common cause of thyrotoxicosis. AF can result from the increased heart rate and altered cardiac function due to elevated thyroid hormones, raising the risk of thromboembolic events. Patients with thyrotoxic AF may experience strokes despite low CHADS2VASc scores, as seen in clinical cases where rapid management of thyrotoxicosis is critical to prevent such outcomes.

Answer 2

- 2.a) gangrene, livedo reticularis, cyanosis
- 2.b) Cholesterol embolism

Cholesterol embolism, also known as cholesterol-embolization syndrome, occurs when cholesterol crystals dislodge from atherosclerotic plaques and block small blood vessels, leading to tissue ischemia.

Symptoms include:

Gangrene: death of tissue due to severe ischemia, often affecting extremities.

Livedo reticularis: A lacy, reddish-blue skin pattern caused by impaired blood flow, typically seen on the lower extremities.

Cyanosis: A bluish discoloration of the skin, particularly noticeable in the toes (often referred to as “blue toe syndrome”), resulting from inadequate oxygenated blood supply.

These manifestations indicate significant vascular damage and require prompt medical attention.

Answer 3

IVC filter

Inferior vena cava (IVC) filters are small devices implanted in the inferior vena cava to prevent blood clots from reaching the lungs, thereby reducing the risk of pulmonary embolism (PE). They are typically used in patients with deep vein thrombosis (DVT) who cannot take anticoagulants due to bleeding risks or other medical conditions.

While IVC filters can be lifesaving, they are associated with several complications, including misplacement of the filter, infection at the insertion site, damage to the blood vessel and DVT occurring despite filter placement. Retrievable filters are designed to be removed once the risk of clotting decreases, but failure to remove them can lead to long-term complications such as increased DVT risk.

Answer 4

Purpura fulminans

Purpura fulminans is a severe condition characterized by rapid skin necrosis and disseminated intravascular coagulation (DIC), often triggered by infections such as meningococcal disease or severe protein C deficiency. The underlying causes include congenital defects in anticoagulant pathways or acquired deficiencies due to conditions such as liver failure or vitamin K antagonism. Complications can lead to multi-organ failure, limb loss,

and high mortality rates due to thrombotic occlusions in small blood vessels. Treatment focuses on addressing the underlying cause, supportive care, and may involve fresh frozen plasma and surgical debridement of necrotic tissue.

References

1. Lee SY, Pearce EN. Hyperthyroidism: A Review. *JAMA*. 2023; **330**(15): 1472-83. doi: 10.1001/jama.2023.19052.
2. Shi C, Mammadova-Bach E, Li C, Liu D, Anders HJ. Pathophysiology and targeted treatment of cholesterol crystal embolism and the related thrombotic angiopathy. *FASEB J*. 2023; **37**(10): e23179. doi: 10.1096/fj.202301316R.
3. Sheahan KP, Tong E, Lee MJ. A review of inferior vena cava filters. *Br J Radiol*. 2023; **96**(1141): 20211125. doi: 10.1259/bjr.20211125.
4. Colling ME, Bendapudi PK. Purpura Fulminans: Mechanism and Management of Dysregulated Hemostasis. *Transfus Med Rev*. 2018; **32**(2): 69-76. doi: 10.1016/j.tmr.2017.10.001.