Intercollegiate Specialty Examination in Cardiothoracic Surgery

Theme: Porcelain aorta in a patient requiring coronary surgery.

Scenario: A 54 year old man has triple vessel coronary disease including a left main stem lesion of 60% with extensive calcification of the ascending aorta on routine coronary angiography.

Introductory Question: (e.g. integration of information presented/application of basic principles to the situation described in the scenario/differential diagnosis)
What is the potential clinical significance of extensive calcification of the aortic root in this patient?

Key Points for Discussion:
Likely to be associated with severe disease of ascending aorta. Main concerns would relate to embolic risk and possible perioperative neurological injury. Further assessment preoperatively by CT would be appropriate.
Discuss patient at MDT.

Question 2: (e.g. management, relevant applied pathophysiology, anatomy)
Describe how would you undertake CABG on this patient.

Key Points for Discussion:
Pre-operative assessment eg bilateral arm blood pressure, CT angio of aorta subclavian
On pump – epiaortic ultrasound, modified cannulation, single cross clamp/avoidance of side clamping, devices to perform proximal anastomoses.
Off pump - pedicled grafts, no-touch aortic technique.

Question 3: (complications of management)
What are the alternative strategies and techniques?

Key Points for Discussion:
Hybrid approach PCI with surgery; if PCI alone then consider how consent would change.
MIDCAB, LAST; top end on brachiocephalic artery.
Consider replacement of ascending aorta. Preferred strategy would be avoidance of aortic clamping by the use of DHCA.

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Theme: Lung Cancer

Scenario: A 61-year-old retired train driver, an ex-smoker with moderate COPD and a history of myocardial infarction, is found to have bilateral lung lesions on a chest X-ray. CT scans confirm a 2 cm lesion in the left upper lobe (adenocarcinoma) and a 2 cm lesion in the right lower lobe (squamous carcinoma). There are no PET-avid nodes, and no distant metastases. His FEV_1 is 1.5L (55%) predicted and his DLCO is 48% predicted.

Introductory question: (e.g. integration of information presented/application of basic principles to the situation described in the scenario/differential diagnosis)
What radical treatment options are possible in this patient?

Key Points for Discussion:
Guidelines re fitness for radical surgery. Alternatives to surgery (SABR, RFA etc), combined modality treatment.

Question 2: (e.g. management, relevant applied pathophysiology, anatomy)
How would you further assess his fitness for surgical treatment?

Points for Discussion:
Functional assessment, exercise testing and alternatives. Cardiac fitness.

Question 3: (complications of management)
The patient has declined radiotherapy or chemotherapy and he has a VO_2 max of 16. How would you counsel him about available surgical options and the likely survival benefit of treatment?

Key Points for Discussion:
Simultaneous bilateral or staged surgery? Surgical approach pros and cons and extent of resection. Is emphysema mainly confined to upper lobe? Which side first?