Cardiovascular Physical Exam

10 potential Royal College Questions

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List 6 causes of a continuous Cardiac Murmur

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- PDA
- Aortopulmonary Window
- Truncus Arteriosus
- Coronary artery Fistula
- Ruptured Sinus of Valsalva
- Aortic Coarctation

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How does one definitively distinguish the murmur of severe aortic stenosis with that of a complete severe flail posterior mitral valve by ausculation alone?

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- Lack of beat to beat variability with regurgitant lesions

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6

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- Right Ventricular Hypertrophy
- Left Ventricular Anneurysm
- Systolic Expansion of left atrium from severe MR

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How does one make a diagnosis of supravalvular aortic stenosis by physical exam alone?

8

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- Differential pulse contours in carotid arteries (AI – bounding in right; AS – pulsus parvus et tardus in left)

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The y descent on the JVP is noted to be blunted. List 3 mechanistically distinct clinical conditions where this could occur.

10

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- Tricuspid stenosis
- RA Myxoma
- Cor Triatriaum Sinister

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A patient has longstanding and severe AI. List 4 murmurs that may be present and etiologically directly related to the lesion, providing an explanation of the mechanism of each.

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- Diastolic Murmur of AI
- MR due to dilatation of LV
- Mitral Stenosis (Austin Flint) from AI jet impinging on the AMVL
- Systolic ejection murmur due to increased flow

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- You are seeing an 18 year old patient who has a diagnosis of rheumatic mitral stenosis.
- Assuming this disease is progressive and involves only the mitral valve and that no intervention will be performed over the course of this individual's lifetime, please describe in detail the physical examination findings at:
- (1) age 18
- (2) age 40
- (3) age 70

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- **Answer:**
  - Age 18: Normal S1; normal S2; +/- OS delayed; soft DM
  - Age 40: Increased S1; normal S2; shorter S2-OS interval; longer Diastolic murmur with PSA
  - Age 70: Decreased/absent S1; increased S2; short S2-OS interval; shorter DM due to loss of presystolic accentuation due to Atrial fibrillation; S3 (LV dysfunction – carditis)

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- Amyl Nitrate is a useful agent in distinguishing murmurs.
  - What are the hemodynamic effects of amyl nitrate over the time of administration?
  - List 5 cardiac lesions in which amyl nitrate will lessen the intensity of the murmur.

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- **Answer:**

- Answers:
- Part 1
- First 30 secs– Systemic art pressure decrease
- 30 to 60 secs– Reflex Tachycardia
- 60 secs – increased CO, HR and blood flow

- Part 2
- Mitral regurgitation
- VSD
- Aortic Regurgitation
- PDA
- Mitral Stenosis (Austin Flint)

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A diastolic rumble is heard while auscultating in the left lateral decubitus position using the bell. List 6 potential etiologies.

18

A diastolic rumble is heard while auscultating in the left lateral decubitus position using the bell. List 6 potential etiologies.

- Mitral valvular stenosis
- Cor triatriatum
- Left atrial myxoma
- Localized left atrioventricular grooce pericardial constriction
- Severe MR
- PDA
- VSD

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Paradoxical splitting of the second heart sound is abnormal. List 2 distinct mechanisms; and provide 2 different clinical examples for each mechanism that can result in this condition.

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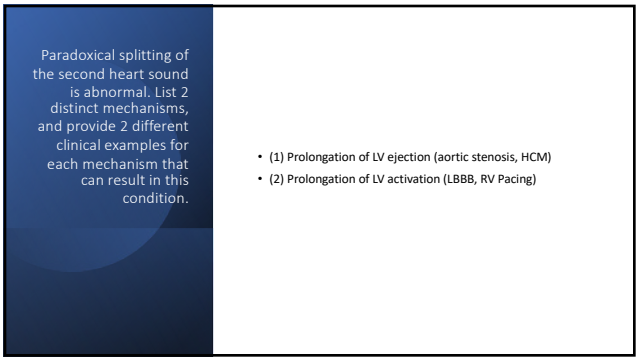
Paradoxical splitting of the second heart sound is abnormal. List 2 distinct mechanisms, and provide 2 different clinical examples for each mechanism that can result in this condition.
• (1) Prolongation of LV ejection (aortic stenosis, HCM)
• (2) Prolongation of LV activation (LBBB, RV Pacing)

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