

Case Study

Cardiac complications with Morbid Obesity

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Personnel information.

1. Name: Capt. XXX
2. Age: 55 years
3. Gender: Male
4. Licence: ATPL Licence holder, type rating – A 320 & A 330
5. Employer: Currently unemployed, Out of job due to COVID
6. Medical Certification status: Expired 3 years back issued by Middle Eastern CAA
7. MC had: Class I with limitations (OML+ corrective lenses)



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Capt. XXX applied for the medical examination for Class I MC on 24th May 2023 after a lapse of 8 years of CAASL medical validity.

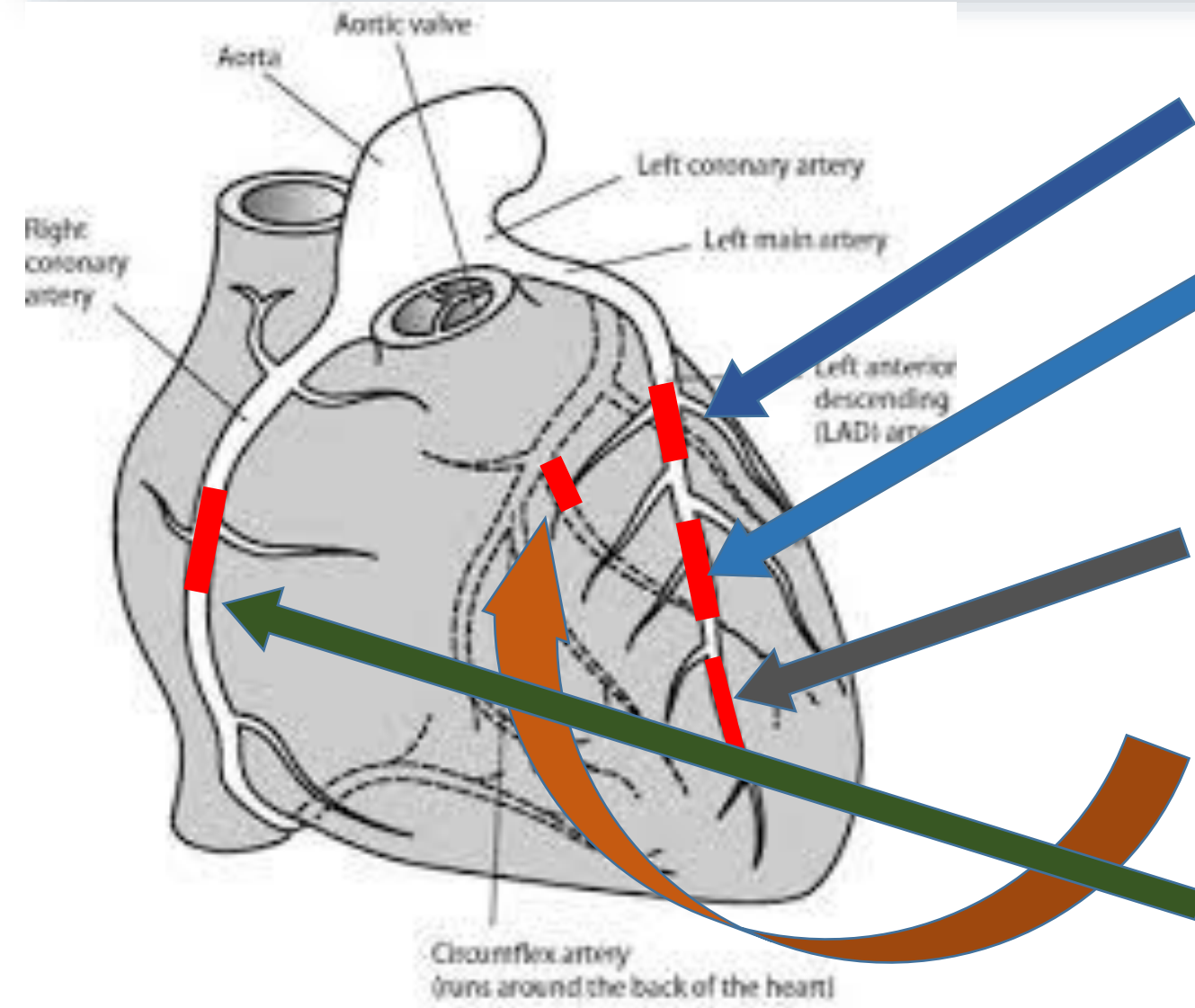
During the medical interview with AME and referring his medical records,

- it was revealed that he has undergone **Angiography in Aug 2018** due to severe triple vessel disease which lead to angioplasty - **stenting of 5 coronary artery obstructions done.**



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1st Stent to proximal LAD

2nd Stent to MID LAD

3rd Stent to Distal LAD

4th Stent to ostium of 1st OM

5th Stent to MID RCA



Clinical Examination by AME in May 2023

1. Weight: 126kg Height: 176.5ccm BMI: 40.7(Morbid Obese)
2. BP: 130/85 Pulse: 74, DR No Murmurs
3. On Medication – YES - Crestor 20mg nocte, Cardace 5mg bd, Concor 5mg daily, Aspirin 150mg nocte, Metformin 500mg bd
4. Vision: near vision corrected with glasses

Past Medical history;

1. Hypertension – on Treatment
2. IHD – on Treatment
3. Mild sleep apnea – Not on treatment, CPAP suggested considering Obesity and his occupation, not adhered to Doctor's advice
4. DM – on treatment, satisfactory control of blood sugar levels.



AME has referred to a Specialist Cardiologist for re-evaluation of his cardiac status

1. Clinical examination normal except obesity factor & SOB on exertion.
2. Hemodynamically normal – BP – 130/85 Ht. rate – 70/min



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Name : [REDACTED]
Gender : M
Age : 55y
Referred By : Dr. [REDACTED]
Company Name : Civil Avn
DATE : 02/05/23,

01. Heart Rate : 61/min regular
02. Rhythm : Sinus Rhythm
03. P - R Interval : normal
04. QRS Interval : normal
05. QRS Axis : normal
06. QRS Complex : normal
07. T Wave : normal
08. Overall Impression : Normal ECG Recording

Date : 2/5/23
Signature : [Signature]



DOPPLER ECHOCARDIOGRAPHY - RESULTS

IVS	-	cm	LA	-	cm
LVPW	-	cm	MVA	-	Sq. cm
LVIDD	-	4.5 cm	MITRAL P. G.	-	mm Hg.
LVIDS	-	cm	PRESSURE HT	-	m/sec.
EF	-	61 %	AVA	-	Sq. cm
CARDIAC OUTPUT	-	L/min.	AORTIC P. G.	-	mm Hg.
VCF	-	%	PUL. VALVE / RVOT P. G.	-	5 mm Hg.
AORTIC ANNULUS	-	cm	TRICUSPID P. G.	-	4 mm Hg.
PUL. ANNULUS	-	cm	RV PRESSURE	-	mm Hg.
MITRAL ANNULUS	-	cm	MPA PRESSURE	-	mm Hg.
AORTA	-	cm			

REPORT

Normal cavity
size & wall motion

Marginal LVH;

Normal Valves.

Normal DD

△ Marginal LVH
probably due to HT
[Signature]

MD



Stress Echocardiogram Report

[REDACTED] MD FACC FCCP FRCP(Edin) FESC

Consultant Cardiologist.

Name: [REDACTED] age: 56yrs Date: June 19, 2023

Rest:

Left Ventricle was normal in size. No RWMA.

Good LV function.

LVEF >60%

Exercise: Rest ECG: Normal Protocol: Bruce

Exercised up to 9 minutes. Maximum BP: 185/102

Achieved a heart rate of 140 / minute and the work load of 10.5 METS.

Test was terminated because of Target Heart Rate

ECG changes:

no ST segment deviations.

Symptoms:

No symptoms.

Post Exercise Echo:

NO RWMA

There was increased LV contractions.

No LV dilatation.

Conclusions:

Stress echocardiogram was negative for inducible ischaemia at the work load of 1.5 METS and the heart rate of 140 /minute.



Cardiac evaluation was done by CAA Designated Cardiologist in June 2023 and further investigations revealed that he is having;

1. Coronary Artery disease with complications.
2. Sleep pattern disturbance and other complications due to Morbid Obesity.

Cardiologist recommendation:

Though all the cardiac investigations are satisfactory, the Capt. has a considerable risk of incapacitation due to extent of coronary artery disease,

1. Multi-vessel Percutaneous coronary intervention, **specially 3 stents in LAD duration more than 5 years**
2. number and types of stent used,
3. stent size (length and diameter)
4. Age, gender, life style
5. Extent of obesity



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AME has referred this case to the Medical Assessor(MA) and MA has decided to convene a Medical Board to decide on his fitness to grant privileges of Class I MC to exercise flying duties.

Question 1

According to the case study and information given, what would be your decision as a Medical Board member?

Question 2

If decided to evaluate more, what are the investigations that you are going to prescribe?



CAASL Medical Board decision

1.

Considering the risk involved due to Cardiac complications associated with morbid Obesity, the Medical Board decided to further investigate his health status by performing below mentioned investigations;

- a) Coronary Angiogram to determine the potency of coronary arteries and vascularization of cardiac muscles.
- b) Sleep study to determine sleep disturbances associated with Sleep Apnoe.

2.

DMF to exercise the privileges of Class I medical certificate until the reports in above number 1 is submitted and he reach the acceptable BMI target given by the Aeromedical Services.



Angiogram report – Patent stents (5) with no in-stent restenosis. Mild to moderate plaque disease in OM2 and distal RCA.

Sleep study report – Mild to moderate changes in sleep architecture, disturbances of sleep progression and reduced sleep efficiency. Negligible periodic limb movements during sleep.



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Question 1

What is your decision on this Capt's fitness to hold Class I Medical certification?

Question 2

If fit, without restrictions or with restrictions?

If with restrictions, what need to be imposed?

Question 3

If Unfit, on what grounds ?



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As service providers at PoE

