Case 1

Instruction to moderators: If information asked by participants is not available in the transcript, please copy the following

The information you requested is not available.

Please liaise with your senior moderator if any doubts at any point of the simulation

Instruction to moderators: once instructed to start case 3, copy this image and wait for participant's reply

Simulation via **I**nstant **M**essaging-
Birmingham **A**dvance

Please assess the patient as you would interact in a real-life clinic. Please request as much information about the patient as you like. However, please bear in mind you have 25 minutes to complete all of the following in each case:

1. History
2. Physical Examination
3. Investigations (forms will be provided)
4. Your diagnosis and proposed management plan to the MDT
5. Post-op follow-up plan (if indicated)

You will receive instructions as you go through the cases. Please feel free to ask the moderators if any doubts at anytime throughout the case.
You have about 25 minutes to complete the simulation, please type "ready" when you are ready to start.

Instruction to moderators After participants are ready, copy the presenting complaint below

Presenting complaint

A 80-year-old woman presents to your clinic with palpitations. Please assess this patient and request any information you will need in your assessment.

History of presenting complaint

I've been experiencing palpitations on and off the past few months. My chest also feels tight and I'm short of breath. I also feel generally unwell in myself. I've been in hospital a few times before for atrial

IF NEEDED:

The information you requested is not available

fibrillation. Since coming into hospital I've had 10 mg Bisprolol on top of my usual 10 mg. I've been told that my heart rate was over 180 bpm earlier on.

Past medical history and surgical history

1. Cerebrovascular accident
2. Paroxysmal atrial fibrillation treated with previous ablation.
3. Myocardial perfusion scintigraphy performed two years ago which was normal.
4. Agoraphobia

Medications

1. Apixaban 5 mg BD (twice daily)
2. Aspirin 75 mg OD (once daily)
3. Atorvastatin 20 mg OD
4. Beclomethasone inhaler OD
5. Bisoprolol 10 mg OD
6. Cyanocobalamin
7. Glyceryl trinitrate (GTN) spray
8. Isosorbide mononitrate modified release 60 mg OD
9. Lactulose OD
10. Lansoprazole 30 mg OD
11. Levothyroxine 76 ug OD
12. Paracetamol 1g QDS (four times daily)
13. Prochlorperazine 3 mg BD
14. Salbutamol PRN

Allergies

1. Naproxen
2. Codeine
3. Benzodiazepines

Family history

None

Social history

I live alone now. I use walking sticks to mobilise inside and outside the house. I do the cleaning together with my grandson. I can walk about 20 yards before I have to stop and rest.

IF NEEDED:

The information you requested is not available

Instructions to moderators: After the participants have asked all the information above please copy the following:

You have now completed history taking. What examinations would you like to perform for this patient?

Examinations: **Ensure to give only the requested section for examinations**

Observations: Alert and responsive. Pulse is irregularly irregular with HR of 150. Otherwise unremarkable.

Systemic examination:

Chest:Old scars present on both forearms and neck scar present from previous carotid endarterectomy.

Heart: Heart sounds are normal with no added sounds. No peripheral oedema. Signs of slight dehydration.

CNS: Speech is slightly slurred but the patient expresses this is normal for her when feeling tired.

Rest examination: within acceptable limits

Instruction to moderators After the participants have asked all the information above please send them the blood form and copy the following.

Please follow the link provided, tick all the relevant investigations you need for the case, and *text the moderator after you have submitted the form.*

https://docs.google.com/forms/d/e/1FAIpQLSe90f7BUpSeNviWaXqLud4jX9iDnFFqcgXbEet9yPGVblMuQg/viewform?usp=sf_link

Results will be provided.

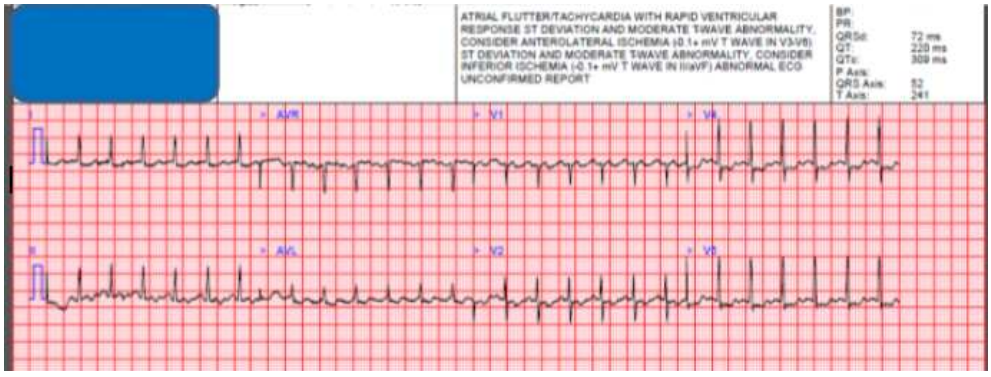
Instructions to moderators: send all the investigations as images from below **after you have confirmed that they submitted the investigations form**.

IF NEEDED:

The information you requested is not available

Investigation	Results	Reference ranges
Hb (Haemoglobin)	135	115-154 g/L
White blood cells	12.4	3.9-10.9 10*9/L
Platelets	345	150-400 10*9/L
INR (international normalised ratio)	1.3	1.0-1.3
PTTR (partial thromboplastin time ratio)	1.1	1.5-2.5
Na (Sodium)	139	133 - 146 mmol/L
K (Potassium)	4.6	3.4 - 5.2 mmol/L
Urea	8.2	2.5-7.8 mmol/L
Creatinine	75	49-90 µmol/L
eGFR (estimated glomerular filtration rate)	66	mL/min/1.73m2
Total protein	73	60-80 g/L
Bilirubin	7	<21 umol/L
ALT (Alanine transferase)	23	0-55 U/L
Creatine Kinase	49	Male: 32 – 294 U/L Female: 33 – 211 U/L
CRP (c-reactive protein)	5	0-5 mg/L
Ca (Calcium)	2.43	2.10-2.60 mmol/L
Corrected Ca	2.43	2.10-2.60 mmol/L
Albumin	40	35-50 g/L
Magnesium	0.76	0.7-1.0 mmol/L
ALP (Alkaline phosphatase)	91	30-130 U/L
Triglycerides	1.5	<1.7 mmol/L
Total Cholesterol	6.4	<5.0 mmol/L
HDL (high density lipoprotein)	1.23	>1.2 mmol/L
LDL (low density lipoprotein)	4.48	<3.0 mmol/L

ECG



Please interpret the ECG (electrocardiogram)

IF NEEDED:

The information you requested is not available

Instructions to moderators: Once the participant has interpreted the ECG, please send the following:

ECG (electrocardiogram) report

Atrial fibrillation with fast ventricular rate. Anterolateral ST depression. HR 180.

Instructions to moderators: If the participant asks for imaging, please send the following:

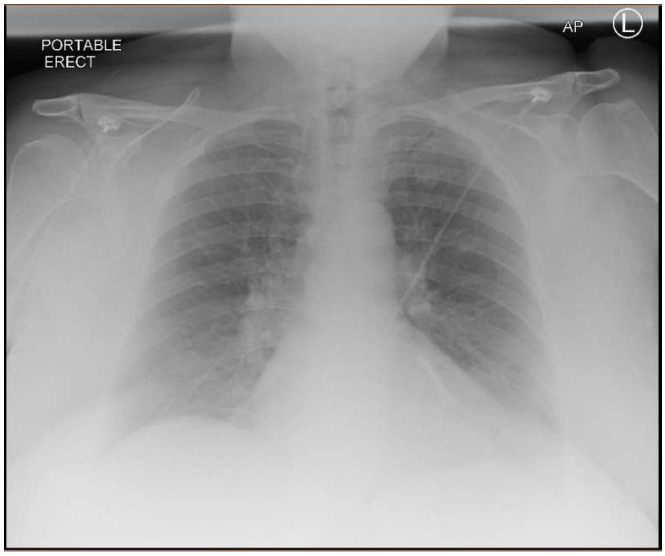
Please follow the link provided, tick all the relevant imaging studies you need for the case, and *text the moderator after you have submitted the form.*

https://docs.google.com/forms/d/e/1FAIpQLSfpSffDUZ_AidUQgYLAHPdYhT2lalrOpuYE0JttzQgh4NHFdw/viewform?usp=sf_link

Results will be provided.

Instructions to moderators: Once the participant has submitted the imaging form, please send the following:

Chest X-Ray



Please interpret the Chest X-Ray:

Instructions to moderators: Once the participant has interpreted the CXR, please send the following:

Chest X-Ray

IF NEEDED:

The information you requested is not available

Clear lung fields, findings unremarkable.

Instructions to moderators: After the participants have asked all the information above, please copy the following:
You have now gathered all the available information for this case.

Please reply to the following:
- State the diagnosis and rationale
- Propose management and follow-up plan

Instructions to moderators: After the participants have answered above please copy the following:
The diagnosis is atrial fibrillation with fast ventricular rate. The rate is still >150 more than 2 hours after the dose of bisoprolol and there is no clear infective precipitant. The case was discussed with cardiology oncall by emergency department who advised patient was otherwise haemodynamically stable and does not need any acute intervention. Therefore recommended admission under acute medicine for observation and further management.
The magnesium level needed to be checked since the patient is taking lansoprazole.

Oral digoxin 500mcg is given with a repeated dose of 500mcg in 6 hours if still in atrial fibrillation with rate >110. The patient is also encouraged to keep up their intake of oral fluids. The patient was also monitored with cardiac monitoring. Refer to Cardiology since the patient has had repeated admissions with the same problem.

Instructions to moderators: Please send the following as a separate message

The patient was reviewed on the ward round the next day.
Since the patient's heart rate remains at 150 bpm, they were started on a maintenance dose of Digoxin (250 mcg). The patient reports they are experiencing nausea, chest tightness, neck and jaw pain but denies any issues with breathing.
The electrocardiogram (ECG) and chest x-ray (CXR) are repeated.
The ECG now shows atrial flutter. In the CXR, the lung fields appear congested.
The patient's heart rate remains at 150 bpm and they are alert and orientated.

Instructions to moderators: Please send the following as a separate message

The patient is then transferred to the cardiology ward from the acute medical unit *
Despite continuing digoxin and bisoprolol, the patient's HR is fixed at 152 and BP is 105/81 and there is resistant atrial flutter. The patient is febrile, experiencing ongoing shortness of breath and dizziness which comes and goes.
An ECG was done which showed atrial flutter with HR at 155.

IF NEEDED:
The information you requested is not available

Transthoracic echocardio gram (TTE) showed dimensionally normal LV with normal size and good overall systolic function (Ejection fraction 60 +/- 5%) and mild mitral regurgitation.

How would you proceed?

Instructions to moderators: After the participants have answered above, please copy the following:

After assessing the patient and reviewing the ECG and TTE findings, the plan was to:

- Monitor rate and prepare to give cardioversion overnight if the patient becomes unstable.
- Replace magnesium, aiming for a level >1 mmol/L
- Electrophysiology review to discuss options regarding persistent atrial flutter.

Instructions to moderators: Please send the following as a separate message

After reviewing the patient, the electrophysiology team explained the risks and benefits of the two following treatment options with the patient:

1) DC Cardioversion and amiodarone therapy
2) Repeating atrial flutter ablation procedure

After weighing up the risks of benefits of each option, the patient chose to have further atrial flutter ablation.
The procedure was successfully done the next day with pulmonary vein isolation and roof line ablation.

What would be your plan for follow up and discharge?

Instructions to moderators: After the participants have answered above, please copy the following:

The plan for follow up was:

- Continue with groin care
- Continue apixaban and bisoprolol but discontinue digoxin
- Repeat ECG and TTE before discharge
- Arrange follow up in 4 months with the electrophysiology clinic with a consultant.

The TTE scan didn't show any obvious pericardial effusion and the ECG showed sinus rhythm at 73 bpm with a PR interval of 20 milliseconds, so the patient was discharged home.

Instructions to moderators: Please send as a separate message right after the previous text

The simulation has ended. Many thanks and we will discuss the case shortly

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