Severe chest pain in a middle-aged man: how to manage?

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A middle-aged man previously unknown to you rings your practice on a Sunday afternoon. You are the only doctor on duty. He wants a house call because he has suddenly developed severe chest pain.

How should your secretary manage this patient's call?

Answer: The secretary tells the man that a house call is not possible, as there is only one doctor on duty. She informs him that she is putting the call through to you.

You advise him that if he has chest pain, he should ring 000 because it could be serious. The man wants to know whether he can have an urgent appointment as he doesn't want to ring 000. The chest pain sounds cardiac in nature by his description. How do you manage this?

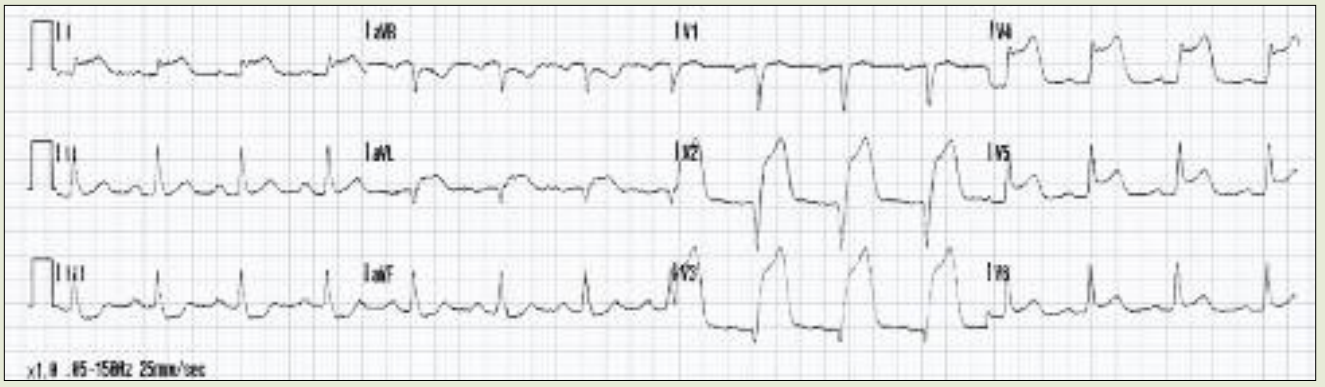
Answer: You obtain his basic details (name, address, contact number, age) and take a very brief history (type of pain, other symptoms, medications, past health, allergies). You tell him you are going to arrange for an ambulance to go to his house as an emergency and that you will confirm this with him once it has been organised. You tell him to sit or lie down and stay calm and still. With his permission, you repeat this to his wife who is with him.

Ten minutes later the secretary alerts you that the same man has arrived with his wife and is still complaining of chest pain. Your secretary thinks he looks unwell. What should you do?

Answer: Immediately excuse yourself from the patient you are with and explain to him or her that there is a possible emergency. Introduce yourself to the man and his wife and take them to the nearest room with access to resuscitation equipment. Lie him down at 45 degrees. Ask your secretary to ring 000 immediately to inform the ambulance service that the patient has arrived at the practice and to collect him as soon as possible. You tell the patient this has been done.

The man is tall, thin and grey in colour. He is clammy, looks anxious, has no nausea and is clearly unwell. His wife explains that he did not want to go to hospital. What is your immediate clinical management? (This management should take two minutes at most.)

Answer: Do not leave the patient until the ambulance arrives. If you have an oxygen saturation monitor, measure his oxygen saturation and then apply oxygen 10 L/min via a mask. Feel his pulse, observe his jugular



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venous pressure and his breathing, and take his blood pressure. Auscultate his chest and listen to his heart. Confirm the type of pain he has and any other symptoms, how long these have been present, and ask if he has had any medical problems, is taking any medications or has had any serious allergies.

You note his pulse rate is 85 beats per minute, regular and full but that his hands and feet are cold and pale. His blood pressure is 120/70 mmHg. He looks cyanosed and your oxygen saturation machine is broken! His jugular venous pressure is not raised. He is not short of breath and his lungs are clear. He has a third heart sound and a mid to late systolic cardiac murmur grade 2/6 at the left sternal edge that increases with exhalation. What do you do next?

Answer: Give him two sprays of glyceryl trinitrate (or one glyceryl trinitrate tablet) under the tongue, tell him not to swallow this and to just leave it to absorb. Explain that this could give him a headache, make him feel faint or make his pulse speed up, and that he should tell you if any of these occur. Give him 300 mg of plain (not enterically coated) aspirin, crushed with sips of water. Perform an ECG in the few minutes it takes to see if the glyceryl trinitrate is effective and then repeat his blood pressure and re-examine his pulse, respiration and jugular venous pressure.

He tells you the chest pain is no better, but not worse. It has now been present for an hour. He does not feel faint. His pulse is slightly less full but his blood pressure is stable at 115/70 mmHg (see Figure of his ECG). On the basis of this ECG, what is the diagnosis?

Answer: An acute anteroseptal myocardial infarction, sinus rhythm with borderline first degree atrioventricular block. There are reciprocal changes in leads III and aVF.

The ambulance has not yet come. His wife wants to know what you think is wrong. What do you do next?

Answer: Give the patient two more sprays of glyceryl trinitrate spray (or one glyceryl trinitrate tablet) and put an 18 g intravenous cannula into a cubital fossa. Repeat the blood pressure and continue to give glyceryl trinitrate spray every five minutes until his blood pressure drops to 100 mmHg systolic. This treatment is not expected to relieve pain from an acute myocardial infarction and so intravenous morphine 2.5 mg should be administered.

Explain to the patient and his wife that you think he has a problem with the blood supply to an area of the heart and that he must go to hospital to have this managed. Explain that these days there are new ways of reversing blockages to the blood supply. Ask the secretary to ring 000 again to find out how long the ambulance will be and to update them on his condition.

While you are waiting for the ambulance, the patient tells you that his father had a triple bypass at the same age as he is now and that both of them smoked for almost two decades. His cholesterol, blood pressure and blood glucose levels have always been normal. Thankfully, the ambulance arrives within half an hour of the initial call. What is the importance of getting this man to hospital so quickly?

Answer: He is having a very significant anteroseptal myocardial infarction and needs treatments that are not available in the general practice setting. He is not responding clinically to first-line management. He also is at high risk of complications in your surgery, such as dangerous arrhythmias, rapid development of heart failure and cardiac arrest.

The best outcomes of emergency coronary reperfusion for ST-elevation myocardial infarction occur when coronary reperfusion is established as soon as possible. Ideally this should occur within 90 minutes of onset of chest discomfort.

Outcome: This man had coronary artery drug-eluting stenting to his proximal left anterior descending artery approximately two and a half hours after the onset of chest pain. He developed a reperfusion ventricular tachycardia afterwards and was managed for congestive cardiac failure. He was discharged from hospital 10 days later with an ejection fraction of 40%. He now takes the following daily medication: a statin, clopidogrel, 100 mg aspirin, bisoprolol and ramipril. His glucose tolerance test was normal. **CT**