Short Communication

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COVID-19 Unmasking Coronary Artery Disease

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Abstract

We report a case of coronary artery disease unmasked by COVID-19 in a 59 year old male patient who was admitted to medical HDU via emergency department primarily with COVID-19 pneumonia; developed chest pain on the third day of admission with EKG features consistent with infero-posterior ST-segment elevation MI. Troponin were significantly raised and bedside echocardiogram exhibited severely impaired LV systolic dysfunction with hypokinetic inferior and lateral walls. CT coronary angiogram revealed diffuse severe three-vessel coronary disease with very high plaque burden (CADRAD score 4b). Subsequent Cardiac MRI confirmed mid inferolateral LV non-viable infarct and evidence of focal myocarditits (LV apical lateral wall).This case reveals thrombogenicity of COVID-19. However it is more commonly associated with myopericarditis with EKG features mimicking ST-segment elevation MI, which exhibits the importance of further investigation to establish the diagnosis. My case is interesting as this patient with no previous cardiac presentation had type 1 MI unmasked by COVID-19 with consecutive focal myocarditis.

Introduction

Coronary artery disease develops when the major blood vessels that supply your heart become damaged or diseased. Cholesterol-containing deposits (plaques) in your coronary arteries and inflammation are usually to blame for coronary artery disease.

The coronary arteries supply blood, oxygen and nutrients to your heart. A buildup of plaque can narrow these arteries, decreasing blood flow to your heart. Eventually, the reduced blood flow may cause chest pain (angina), shortness of breath, or other coronary artery disease signs and symptoms. A complete blockage can cause a heart attack.

Because coronary artery disease often develops over decades, you might not notice a problem until you have a significant blockage or a heart attack. But you can take steps to prevent and treat coronary artery disease. A healthy lifestyle can make a big impact.

Symptoms

If your coronary arteries narrow, they can't supply enough oxygen-rich blood to your heart — especially when it's beating hard, such as during exercise. At first, the decreased blood flow may not cause any symptoms. As plaque continues to build up in your coronary arteries, however, you may develop the following coronary artery disease signs and symptoms:

Chest pain (angina). You may feel pressure or tightness in your chest, as if someone were standing on your chest. This pain, called angina, usually occurs on the middle or left side of the chest. Angina is generally triggered by physical or emotional stress. The pain usually goes away within minutes after stopping the stressful activity. In some people, especially women, the pain may be brief or sharp and felt in the neck, arm or back.

Shortness of breath. If your heart can't pump enough blood to meet your body's needs, you may develop shortness of breath or extreme fatigue with activity.

Heart attack. A completely blocked coronary artery will cause a heart attack. The classic signs and symptoms of a heart attack include crushing pressure in your chest and pain in your shoulder or arm, sometimes with shortness of breath and sweating.

Women are somewhat more likely than men are to have less typical signs and symptoms of a heart attack, such as neck or jaw pain. And they may have other symptoms such as shortness of breath, fatigue and nausea.

Sometimes a heart attack occurs without any apparent signs or symptoms.

When to see a doctor

If you think you're having a heart attack, immediately call 911 or your local emergency number. If you don't have access to emergency medical services, have someone drive you to the nearest hospital. Drive yourself only as a last option.

If you have risk factors for coronary artery disease — such as high blood pressure, high cholesterol, tobacco use, diabetes, obesity a strong family history of heart disease — talk to your doctor. Your doctor may want to test you for coronary artery disease, especially if you have signs or symptoms of narrowed arteries.

Request an Appointment at Mayo Clinic

Causes

Development of atherosclerosis

Development of atherosclerosis Open pop-up dialog box

Coronary artery disease is thought to begin with damage or injury to the inner layer of a coronary artery, sometimes as early as childhood.