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Case report

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Bodybuilding, exogenous testosterone use and myocardial infarction

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Learning Point for Clinicians

Myocardial infarction in the young can be related to cocaine and anabolic steroid use. This case reminds us that although an uncommon cause, anabolic steroids should not be forgotten. Furthermore, this case teaches us the utility of repeating the clinical history, particularly when a 'diagnostic dead end' is reached or there is high clinical suspicion of something a patient may be reluctant to disclose.

A 30-year-old male, presented with chest pain at rest. His electrocardiogram showed anteroinferior ST elevation. He underwent primary percutaneous coronary intervention (PCI) During PCI a large white thrombus was removed from the left anterior descending artery (Figure 1). There was no evidence of atherosclerotic disease. No vascular stent was deployed due to the risk of thrombus propagation.

Post-PCI, a full history and examination revealed no typical atherosclerotic risk factors other than his father having had a nonfatal myocardial infarction aged 50. He had no personal or family history of thrombotic events. He was a bodybuilder and initially denied taking any supplementary drugs, including both anabolic steroids and cocaine. Cardiovascular examination was normal. Initial admissions investigations showed haemoglobin and haematocrit at the upper end of normal range, normal clotting profile and negative urine toxicology.

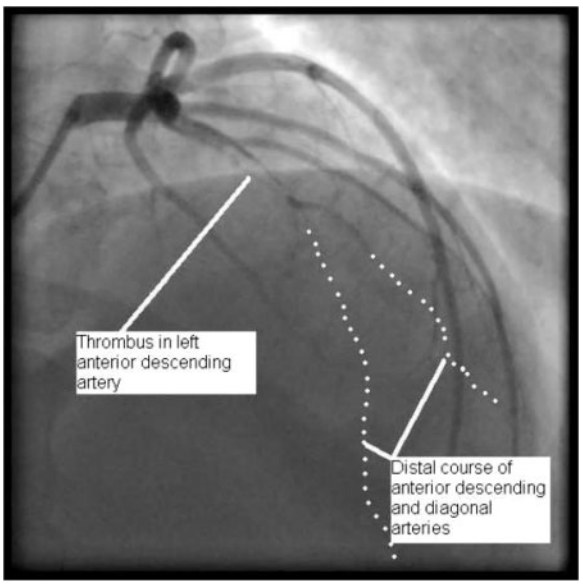

Figure 1. Still image from angiogram showing a thrombus in the left anterior descending coronary artery.

On the fourth day of admission, he revealed he had been taking oral testosterone for several years. This was subsequently confirmed with features including loss of libido, erectile dysfunction, reduction in testes size and fully suppressed follicle stimulating hormone and luteinizing hormone on pituitary function tests. Twelve weeks after discharge, a thrombophilia screen was negative.

Higher levels of endogenous testosterone has been linked with improved cardiovascular outcomes in the elderly but not in men <70 years old.[1] However, the cardiovascular risk effect of long-term high dose exogenous testosterone particularly for bodybuilding purposes is less clear. This level of use though is associated with polycythaemia and the risk of thrombosis.[2] An ST elevation myocardial infarction related to testosterone use has been previously reported in a 44-year old with atherosclerotic coronary artery disease.[3] We believe this is the first reported case of coronary artery thrombus, with normal coronary arteries on angiogram, related to long-term testosterone use.

Conflict of interest: None declared.

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