Acute aorto-iliac Artery Occlusion: a Rare Complication of Mitral Stenosis

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ABSTRACT

A 42 year old man, diagnosed with rheumatic heart disease and mitral stenosis, presented to the emergency department with acute onset low abdominal pain, severe pain in both lower limbs with paraplegia. The pulses of his feet could not be felt on either side. CT angiogram revealed saddle thrombus at the aorto-iliac junction occluding both common iliac arteries. An intra-arterial thrombolysis was done which was followed by anticoagulation. Within few hours of the thrombolysis, his abdominal pain and pain in the lower limbs subsided and he regained full function of both lower limbs. Pulses in the right foot could be felt but the left posterior tibial pulse was still weak after the procedure. He went on to develop gangrene of the left 2nd and 3rd toes which were amputated later.

Key words : Acute, Aorto-iliac, Mitral stenosis, Thrombosis.

CASE REPORT

A 42 year old man, earlier diagnosed with mitral stenosis, presented to the emergency department with acute onset abdominal pain, severe pain in both lower limbs and paraplegia. On examination his pulse rate was 120/min, irregularly irregular. The dorsalis pedis and posterior tibial artery pulse could not be felt in either limb. BP was 150/100 mm Hg. His first and second heart sounds were soft. There was a mid- diastolic murmur at the apex and a soft pan systolic murmur at the left sternal border. His breath sounds were normal. Abdominal examination revealed tenderness in the hypogastrium and bilateral iliac fossae but no masses were felt. He had grade zero power in both lower limbs.

He had an emergency CT angiogram which revealed saddle thrombus at the aorto-iliac artery bifurcation. Echocardiogram showed severe mitral stenosis with aortic regurgitation and PAH but no evidence of a clot. Trans – esophageal echocardiogram was planned at a later date, but the patient was unwilling.

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He had intra- arterial thrombolysis followed by heparin infusion and later started on oral anticoagulation. Within few hours of the thrombolysis, his abdominal pain and leg pain disappeared and he regained full function of both lower limbs over the next 4 days. His dorsalis pedis pulse and posterior tibial of the right side returned but the left posterior tibial pulse was still weak. He slowly developed dry gangrene of the left 2nd and 3rd digits and was taken for amputation.

DISCUSSION

Aorto-iliac occlusion, when chronic and due to atherosclerosis is called Leriche syndrome. This presents as bilateral gluteal claudication, impotence and pain in both lower limbs. When aorto-iliac junction artery occlusion occurs acutely, it is a life and limb threatening situation and needs to be diagnosed and dealt with emergently. The presentation of the patient depends on the extent and site of the thrombus.

The original syndrome described by leriche in 1940 was chronic occlusion of the end of the abdominal aorta which presents as gluteal claudication, impotence in men and chronic ischemic pain in the lower limbs.[1] The presentation of chronic thrombosis and slow occlusion differentiates this syndrome from acute occlusion of the aorto-iliac bifurcation, which is mostly described in patients with heart disease due to embolus from a thrombus in the heart, as

in Mitral stenosis, as seen in our patient. While Leriche syndrome is not a life threatening emergency, acute aortic embolism is, as it could compromise circulation to the pelvic organs and cause infarction, gangrene and death.

Our patient was diagnosed with Mitral stenosis and was in atrial fibrillation. He presented with acute lower abdominal non-specific pain, and severe pain and paralysis of both lower limbs. His limbs were saved with timely intra- arterial thrombolysis followed by anticoagulation, which were initiated within 1 hour of onset of his symptoms.

Despite the thrombolysis done within a frame of 1 hour of onset of symptoms, the patient developed digital gangrene in the left second and third toes. This could be explained by an embolic fragment from the main thrombus, which dislodged either before the thrombolysis or during the procedure. However his right lower limb and the rest of his left lower limb were saved.

Starer *et al* described six cases of mitral stenosis with atrial fibrillation who presented with several embolic episodes and a sub acute presentation of abdominal aortic occlusion at various levels. The patients presented with recent history of severe claudication in the lower limbs and their foot pulses were weak or absent. However, none of these cases had a typical saddle embolus at the aorto-iliac bifurcation or presented with acute complete occlusion and paraplegia of half hour's duration as our patient did.[2]

Lai *et al* described a patient with atrial fibrillation presenting with acute paraplegia, paresthesia and pain in both lower limbs. Computed tomographic imaging showed filling defects over the low abdominal aorta just above the bifurcation of the common iliac artery and bilateral femoral arteries. Her symptoms resolved after emergent thrombectomy for acute limb ischemia.[3]

Another case of a 50 year old female smoker who gave a 4-week history of limb claudication was described by Bean *et al*, diagnosed to have recent aorto- iliac junction artery occlusion and was successfully treated with intra- arterial streptokinase, angioplasty and later anticoagulation.[4]

Reports have been described about a man developing acute occlusion of the abdominal aorta following acute myocardial infarction who was successfully treated with a trans- femoral embolectomy.[5] Vasculitis, hypercoagulable states have been discovered to be rare causes of acute occlusion of the abdominal aorta.[6]

The UCLA Medical Center studied 26 patients over a twenty- year period presenting with bilateral lower extremity ischemia, with or without extension of clot to the iliac bifurcation. Ninety-six per cent of emboli were of cardiac origin. Rest pain and motor/sensory deficits were main complaints in 92% of the patients. The authors concluded that the keys to successful treatment of saddle embolus included high dose heparin which is maintained through the perioperative period, embolectomy without preoperative angiography, and maintenance of long term anticoagulation.[7]

Danto *et al* described acute aortic thrombosis in nine patients who presented with a characteristic sequence of established claudication followed by sudden, unrelenting rest pain, severe ischemia, absence of pulses below the umbilicus, and (usually) no apparent cardiac source for an embolus. Eight patients underwent aorto-iliac or aorto-femoral bypass. Bypass surgery resulted in a 94% limb salvage rate.[8]

CONCLUSION

In a patient presenting sudden severe pain in the lower limbs with paraplegia, it is imperative to check the pulses in the lower limbs to look for limb ischemia. Timely intra- arterial thrombolysis in acute aorto-iliac occlusion could be a life and limb saving procedure. Institute where the patient presented: MIOT Hospitals, Chennai.

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