World Journal of Vascular Surgery

Case Report
Published: 19 Dec, 2022

Unusual Presentation of Left Acute Upper Limb Pain

Patel J, Jha S, Dave SR, Chaudhary J, Poptani D, Agarwal C and Nimavat R*

Department of Vascular Surgery, Shri Krishna Hospital, Pramukh Swami Medical College, India

Abstract

Isolated non atherosclerotic axillary artery disease is a clinically rare condition. External axillary artery compression can result in occlusion or stenosis or aneurysm formation and subsequent upper extremity ischemia further or distal thromboembolism. In this case a 41-year-old female was brought to trauma department of Shree Krishna Hospital with chief complaint of severe left upper limb pain. Acute in onset & gradually progressive in nature & unable to move left hand & wrist. Once the patient was vitally stable, urgent CT angiography was done, suggestive of complete occlusion of left brachial artery and distal arteries. On the impression of acute limb ischemia & long segment acute thrombus in left axillary artery, on the same day thrombectomy with vein patch plasty followed by that fasciotomy was done. Spo_2 was recordable & pulse was palpable on the same day of emergency OT, Pulses which were not appreciable when patient came to trauma earlier.

Keywords: Acute upper limb Ischemia; Isolated non atherosclerotic axillary artery disease; Unusual upper limb pain; Acute upper limb compartment syndrome; Cerebrovascular events

Introduction

The successful intervention of atherosclerotic Peripheral Arterial Disease (PAD) of various locations is well described in the literature. However, there is very little published literature about non atherosclerotic axillary artery disease and its endovascular management. We hereby describe a case of non atherosclerotic axillary artery disease which was successfully managed. Further more acute limb ischemia is often an end-of-life condition that presents in a patient with multiple co-morbidities. Acute upper limb ischemia is one of the unusual presentations seen in non atherosclerotic axillary artery disease in which there is a sudden deterioration in the arterial supply to limb, excluding trauma and iatrogenic causes, two main reasons for acute limb ischemia being arterial embolism and thrombosis. The main objective of this clinical case report is to highlight this rare occurrence and outcome of current treatment. Acute limb ischemia being one of the toughest challenges encountered if not diagnosed meticulously can cost a limb to the patient.

Case Presentation

A 41-year-old female was brought to trauma dept of Shree Krishna Hospital, tertiary care centre in western part of India with chief complaint of severe left upper limb pain. Acute in onset & gradually progressive in nature & unable to move left hand & wrist.

There is no history of trauma, fever, cough, headache, blurring of vision, aphasia, aphonia, weakness of other limbs.

No significant past history.

On admission - had blood pressure of 190/110 mm of Hg and pulse of 140 beats/min, recorded over right limb.

Examination of local area of the left upper limb.

On inspection - Cyanosis of fingers, not able to move fingers (Figure 1) and wrist, movement of elbow present.

On Palpation - Temperature was cold, no brachial, radial or ulnar pulses, oxygen saturation was not recordable on left arm.

On admission, immediately 5000 I.U. Heparin IV given, Inj. Nitroglycerine started, Inj. Tramadol given, IV fluids started.

Urgent CT angiography (Figure 2) was done, suggestive of complete occlusion of left brachial artery, left profunda brachii artery, left radial artery, left superficial palmar arch and palmar digital

OPEN ACCESS

Correspondence:
Jayesh Patel, Department of Vascular Surgery, Shri Krishna Hospital, Pramukh Swami Medical College, Karamsad, Anand, 388325, Gujarat, India, Tel: +919426030911; E-mail: drjayeshpatel_30@yahoo.com

Received Date: *30 Nov 2022*
Accepted Date: *14 Dec 2022*
Published Date: *19 Dec 2022*

Citation:
Patel J, Jha S, Dave SR, Chaudhary J, Poptani D, Agarwal C, et al. Unusual Presentation of Left Acute Upper Limb Pain. World J Vasc Surg. 2022; 5(1): 1033.

Figure 1: Cyanosis of fingers and nails.

Figure 2: Left upper limb angiography.

Figure 3: Forearm fasciotomy, vein patch plasty.

arteries & shows changes in arch of aorta.

On the impression of acute limb ischemia & long segment acute thrombus in left axillary artery, emergency thrombectomy (Figure 3, 4) with vein patch plasty was done and to relieve the compartment

Figure 4: Large thrombus.

Figure 5: Wound healing in nature, regain movement.

pressure fasciotomy was done. Muscles were healthy and distal pulse was palpable.

Post Op medications - Anticoagulation given for 7 days and dual antiplatelets were given for 3 months with high dose statins. Antibiotics, painkillers, intravenous fluids were given. Physiotherapy started. The limb was salvaged and the patient is showing tremendous improvements in form of relief from pain and was able to move fingers and wrist (Figure 5).

Discussion

Axillary artery occlusion is a rare condition that is difficult to recognize at first. Since one of the most common differential diagnoses, one comes across with clinical features our patient presented was cerebrovascular event, acute compartment syndrome, angina pectoris, complex regional pain syndrome, or other etiologies that cause isolated hand or finger pain, or motor or sensory abnormalities (eg. injury, infection, hematoma) may be confused with hand/digital ischemia.

Where as in literature acute limb ischemia is defined as a sudden decrease in limb perfusion with the onset of symptoms of less than two weeks duration. The clinical presentation depends on the time course of vessel occlusion, the location of the affected vessels, and the ability to recruit collateral channels to provide flow around the occlusion, and whether there is underlying vascular disease. The classic physical signs of acute limb ischemia in a patient without underlying occlusive vascular disease are the six P's (pain, pallor, pulselessness, Poikilothermia, paresthesia, and paralysis). When

collateral circulation cannot compensate, minor sensory deficits develop as a sign of early nerve dysfunction; major sensory or motor loss is indicative of advanced ischemia as seen our case. Patient with severe ischemia, irreversible muscle necrosis occurs within 6 h to 8 h if the condition isn't treated. Acute limb ischemia is associated with the loss of peripheral pulses, which also helped us to define the level of occlusion. Class IIa ischemia encompasses as acute subcritical ischemia and class IIb ischemia as acute critical ischemia. The three findings that best differentiate IIa from IIb ischemia are pain at rest, sensory loss and muscle weakness. Patient usually present with a cold feeling and numbness rather than pain in the arm.

One of the reasons of acute limb ischemia is thrombus that results from blood clotting within an artery, a large thrombus was retrieved during thrombectomy, a thrombus can be caused by progressive atherosclerotic obstruction, hypercoagulability or aortic or arterial dissection whereas underlying etiologies mentioned above were not present in our case.

Computed tomographic angiography is the investigation of choice for acute ischemia.

Heparin anticoagulation has no direct thrombolytic effect, it is employed to stabilize clot formation and prevent further secondary thrombosis. It immediately prevents proximal and distal thrombus propagation and preserves the microcirculation. Heparin anticoagulation is one of the components of treatment but it is not the definitive treatment. Followed by this on the same day thrombectomy with vein patch plasty was done and to relieve the compartment pressure fasciotomy was done.

A cerebrovascular event can present with upper extremity symptoms (eg. paresthesias, motor weakness) that mimic early symptoms of acute upper limb ischemia. A thorough cardiovascular and neurologic examination should help make the distinction. Whereas cardiovascular and neurological examination came out to be Normal.

Acute compartment syndrome of the upper extremity is commonly related to traumatic injury. It may be difficult to differentiate hand ischemia that is due to arterial injury from that which is related to increased compartment pressure (arm, forearm, hand). Important clinical findings of compartment syndrome include severe pain disproportionate to the physical findings, passive extension causing pain of the compartment constituent muscles, or tense fascia by palpation. If not recognized, compartment syndrome can progress to an irreversible state (ie, Volkmann contracture). Thus, ruling out this possibility as well.

Complex regional pain syndrome is a disorder that usually affects the distal limbs and is characterized by pain, swelling, limited range of motion, vasomotor instability, skin changes, and patchy bone demineralization. It frequently begins following a fracture, soft tissue injury, or surgery. Symptoms may be confused with chronic distal ischemia; however, the pulses are normal. In our case however pulses over the affected limb were not palpable.

So, In cases of unusual upper limb pain, we should always keep in mind other differential diagnosis, one of them as non atherosclerotic axillary artery disease.

Early diagnosis and appropriate treatment can lead to better result as seen in our case.

Tullos et al. [1] described the first successful case of surgical treatment of axillary artery thrombosis in a baseball pitcher.

Although there are no definitive guidelines for the use of antiplatelet and anticoagulation medications after surgery, our common practice is to continue anticoagulations for 7 to 14 days and dual antiplatelets for three months followed by single antiplatelet for life long and high dose of statin for three months followed by reduction of statin dose. And is similar to that reported by Duwayri et al. [2].

Conclusion

Axillary artery thrombosis is a rare problem with significant consequences. Given their propensity for distal thromboembolism, prompt recognition of these lesions is paramount. This report demonstrates that complete functional recovery is possible within several months after surgery.

References

1. Tullos HS, Erwin WD, Woods GW, Wukasch DC, Cooley DA, King JW. Unusual lesions of the pitching arm. Clin Orthop Relat Res. 1972;88:169-82.

2. Duwayri YM, Emery VB, Driskill MR, Earley JA, Wright RW, Paletta GA, et al. Positional compression of the axillary artery causing upper extremity thrombosis and embolism in the elite overhead throwing athlete. J Vasc Surg. 2011;53(5):1329-40.