



ORIGINAL RESEARCH PAPER

Cardiology

A CASE REPORT OF SUCCESSFUL CATHETER GUIDED THROMBOLYSIS OF ACUTE MESENTERIC EMBOLISM IN A PATIENT OF PAROXYSMAL ATRIAL FIBRILLATION

KEY WORDS:

Dr Rajeev Bagarhatta

Senior Professor, Department of Cardiology, SMS Medical College, Jaipur, Rajasthan

Dr Mayank Sarawag*

Senior Resident, Department of Cardiology, SMS Medical College, Jaipur, Rajasthan *Corresponding Author

ABSTRACT

A sixty year old elderly female residing at Sawai Madhopur, Rajasthan comes with one day history of diffuse non localising abdominal pain. She had history of paroxysmal AF for which she was cardioverted recently and she was maintaining sinus rhythm on admission. Other than chronic hypertension she did not have any other significant co morbidities.

On admission to Gastroenterology Department in SMS Hospital on 19th Nov. 2017 she was evaluated and CT Angiography of abdomen suggested a subtotal occlusion of distal superior mesenteric artery with thrombo-embolus. She was referred to cardiology department for evaluation.

On examination and appropriate work up she consented to give percutaneous catheter based thrombolysis for 24 hours by urokinase infusion through femoral artery access. During therapy she developed fever and raised leukocyte counts but otherwise had no remarkable events. Repeat CT Angiography of abdomen showed clearing of thrombo-embolus.

This is one rare kind of case report where subtotal occlusion of superior mesenteric artery (SMA) from presumably cardio-embolism due to paroxysmal AF was successfully treated with catheter guided thrombolysis.

She was discharged after uneventful recovery on 30th Nov. 2017. On follow up she seems to be fine and had no further pain abdomen.

INTRODUCTION

Occlusion of the mesenteric vessels is regarded as one of those conditions of which the diagnosis is impossible, the prognosis hopeless, and the treatment almost useless.

Mesenteric ischemia is caused by blood flow that is insufficient to meet the metabolic demands of the visceral organs. The severity of ischemia and the type of organ involved depend on the affected vessel and the extent of collateral-vessel blood flow.

Despite advances in the techniques used to treat problems in the mesenteric circulation, the most critical factor influencing outcomes in patients with this condition continues to be the speed of diagnosis and intervention. Although mesenteric ischemia is an uncommon cause of abdominal pain, accounting for less than 1 of every 1000 hospital admissions, an inaccurate or delayed diagnosis can result in catastrophic complications; mortality among patients in whom this condition is acute is 60 to 80%. Arterial obstruction, the most common cause of mesenteric ischemia, has both acute and chronic forms. Acute mesenteric ischemia constitutes a surgical emergency. It is associated with embolic occlusion in 40 to 50% of cases, with thrombotic occlusion of a previously stenotic mesenteric vessel in 20 to 35% of cases, and with dissection or inflammation of the artery in less than 5% of cases. More than 90% of cases of chronic mesenteric ischemia are related to progressive atherosclerotic disease that affects the origins of the visceral vessels; treatment in such cases is focused on elective revascularization to avert the risk of complications and death associated with the development of acute ischemia.

Mesenteric venous thrombosis, which accounts for 5 to 15% of cases of mesenteric ischemia, results in impaired venous outflow, visceral edema, and abdominal pain. Its causes include primary or idiopathic thrombosis; however, 90% of cases are related to thrombophilia, trauma, or local inflammatory changes that may include pancreatitis, diverticulitis, or inflammation or infection in the biliary system. Patients typically have a response to anticoagulation in combination with treatment for the underlying local or systemic processes. Surgical intervention is reserved for

patients who are critically ill or whose condition is deteriorating; it is rarely required. In the diagnosis of mesenteric vascular disease, duplex ultrasonography has a high degree of reliability and reproducibility, with both a sensitivity and a specificity of 85 to 90%. It is an effective, low-cost tool that is helpful in the assessment of the proximal visceral vessels, although the results can be limited more distally.

Given its 95 to 100% accuracy, computed tomographic angiography (CTA) has become the recommended method of imaging for the diagnosis of visceral ischemic syndromes. Images of the origins and length of the vessels can be obtained rapidly, characterize the extent of stenosis or occlusion and the relationship to branch vessels, and aid in the assessment of options for revascularization. Catheter angiography, which was previously considered to be the standard method of diagnosis of mesenteric ischemia, has become a component of initial therapy. Angiography with selective catheterization of mesenteric vessels is now used once a plan for revascularization has been chosen. Single or complementary endovascular therapies, including thrombolysis, angioplasty with or without stenting, and intraarterial vasodilation, are then combined to restore blood flow.

Case report

The patient a 60 Yrs old non-Smoker, non-Alcoholic female on 19th Nov(November) 2017 came to Emergency Department, SMS Hospital with one day history of diffuse non localising non radiating dull aching pain. Pain was not aggravated or relieved with posturing. It was not associated with altered bowel habits or urinary symptoms.

She was admitted in Gastroenterology Department SMS Hospital on 19th Nov 2017 for further evaluation. On admission she was hemodynamically stable and systemic examination revealed no abnormality. Routine blood chemistry including serum Lactate, serum Amylase and USG Abdomen was within normal range.

Her ECG showed normal sinus rhythm(NSR) and her 2D ECHO was normal. As pain was out of proportion of physical

examination consideration of mesenteric ischemia was given. CECT Abdomen and CT Angio of Abdominal Vessels showed thrombo-embolus occluding sub totally distal SMA. On 14th Nov 2017 she was cardioverted with 50 Joules of DC Shock after ruling out LA clot with trans-oesophageal echocardiography(TEE) for Paroxysmal AF in Department of Cardiology, SMS Hospital, Jaipur. She was discharged on 17th Nov 2017 with her chronic hypertensive medications, amlodipine, metoprolol and telmisartan and antiplatelet aspirin.

So she was referred to Department of Cardiology SMS Hospital for further management of acute mesenteric Ischemia.

As acute mesenteric ischemia is a surgical emergency on reaching Cardiology Department, SMS Hospital, the patient was posted for conventional catheter angiography for confirmation of diagnosis and as well as helping planning further management. After right femoral arterial access SMA was hooked with JR diagnostic catheter and exchanged with pigtail catheter, which was parked proximal to the obstruction in SMA. She was given bolus of Urokinase 2 lakh IU followed by infusion of 50000 IU per hour for next 24 hours through pigtail catheter. She was also overlapped with IV UFH (unfractionated heparin) infusion dose of 1000 IU per hour. After successful completion of therapy she underwent repeat CT Angio of abdominal vessels which showed clearing of thrombo-embolus from SMA. She developed fever with raised leukocyte count during therapy otherwise had unremarkable course. Catheter tip for culture and sensitivity showed no growth of micro-organisms.

She was discharged from Department of Gastroenterology, SMS Hospital on 30 Nov. 2017 and was put on anti-hypertensive treatment along with anti-coagulants.

As our patient had subtotal distal occlusion of SMA due to cardio-embolism and there were no signs of bowel necrosis and peritonitis, she was posted for intervention in the form of catheter guided direct thrombolysis into culprit vessel SMA with urokinase infusion in the absence of contra-indications. Results were good and we could avoid progression of acute mesenteric ischemia event and open surgery which was first line of therapy in the past when intervention options were limited.

Long term follow up is still awaited but during first visit after a month of discharge Patient seems to be doing fine.

Given the clinical scenario early diagnosis and judicious intervention provided excellent clinical and angiographic results.

Figure 1 - Before Treatment:

(Arrow suggesting presence of thrombo-embolus in superior mesenteric artery distally)

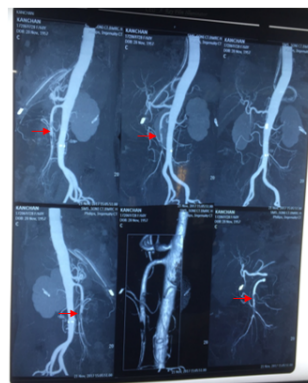
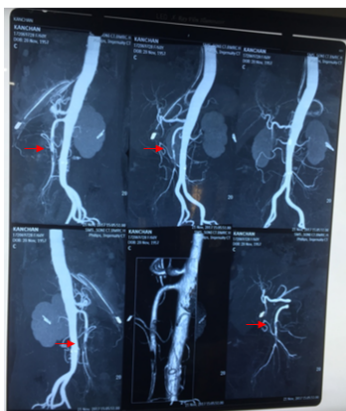
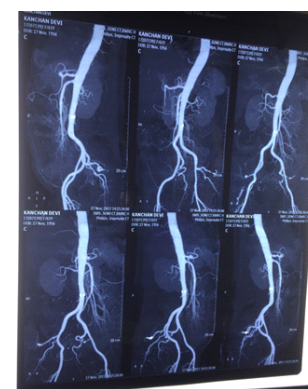
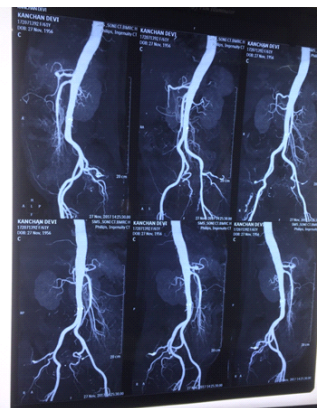


Figure 2 - After Treatment:

(Clearing of thrombo-embolus in superior mesenteric artery)



Disclaimer- No conflicts of Interest. Appropriate consent was obtained.

REFERENCES

1. Clair DG, Beach JM. Mesenteric Ischemia. *N Engl J Med* 2016;374:959-68.
2. Ierardi AM, Tsetis D, Sbaraini S, et al. The role of endovascular therapy in acute mesenteric ischemia. *Ann Gastroenterol* 2017;30 (4): 526-533.
3. Acosta S, Bjorck M. Modern treatment of acute mesenteric ischaemia. *BJS* 2014;101:e100-e108.
4. Schoots IG, Levi MM, Reekers JA, et al. Thrombolytic Therapy for Acute Mesenteric Artery Occlusion. *J Vasc Interv Radiol* 2005; 16:317-329.
5. Park WM, Glowiczki P, Cherry KJ, et al. Contemporary management of acute mesenteric ischemia, Factors associated with survival. *J Vasc Surg* 2002; 35: 445-52.
6. Stephen E, Sarfaraz ZK, Abdelhedy I, et al. Acute Mesenteric Ischemia: The What, Why, and When?. *Indian J Vasc Endovasc Surg* 2016; 3:24-8.
7. Quiroga B, Verde E, Abad S, et al. Detection of patients at high risk for nonocclusive mesenteric ischemia in hemodialysis. *J Surg Res* 2013; 180:51-5.
8. Corcos O, Nuzzo A. Gastro-intestinal vascular emergencies. *Best Pract Res Clin Gastroenterol* 2013;27: 709-25.
9. Boley SJ, Brandt LJ, Sammartano RJ. History of mesenteric ischemia: the evolution of a diagnosis and management. *Surg Clin North Am* 1997; 77:275-88.
10. Boley SJ, Sprayregen S, Siegelman SS, Veith FJ. Initial results from an aggressive roentgenological and surgical approach to acute mesenteric ischemia. *Surgery* 1977; 82:848-55.