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Amputated ischaemic limb due to thrombo-emboli of major artery manage by Fogarty embolectomy has better prognosis than manage by LMW Heparin

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Abstract
Extraction of arterial emboli using the Fogarty catheter has been widely accepted technique for embolectomy but it also give better circulatory function in amputated limb and its wound healing.
Case presentation: This report describes arterial occlusion due to emboli in upper or lower limb has better circulatory function in amputated limb after thromboembolectomy with a Fogarty catheter. It was managed successfully using an endovascular technique consisting of selective catheterization and coil embolization.
Conclusion: Endovascular technique can be successfully used to prevent further ischaemia of limb and has better circulatory function in amputated limb than manage by LMW Heparin An interesting case is presented and its management discussed below.

Keywords: Amputated, thrombo-emboli, artery, Fogarty embolectomy, LMW Heparin

Introduction

Case report

Case 1

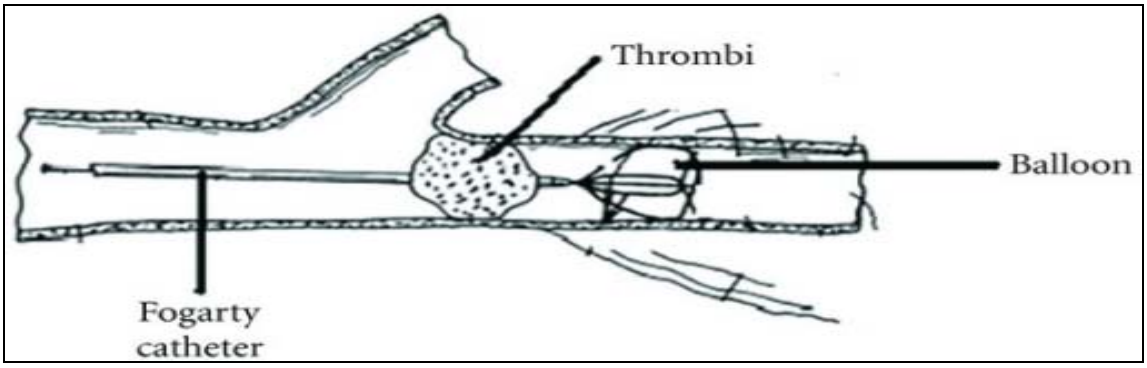
A 80-year-old woman developed acute numbness and coolness of her left hand on 6th April 2016 which was sudden in onset with exact etiology not known. For that she consult local doctor at Bhagalpur. But within 3 day she develop severe pain & bluish discolouration of fingers of left hand. On 11th April 2016 Colour Doppler of both upper limb done. Right upper limb shows normal Doppler study while left upper limb shows loss of triphasic patterns in subclavian, axillary & brachial artery. And also there is loss of diastolic flow in left upper limb probebely due to arteriovenous occlusion. As patient start developing gangrene which ascend in left forearm. Then she came to AIIMS, Patna for further management on 13th April. She has h/o DM, HTN.

On examination there was blackish discolouration of left forearm. There was absent digital, radial and brachial pulse. Finger movement absent. And with passes of time patient was going in septicemia and has electrolyte imbalance. So on 23rd April guillotine amputation with elbow disarticulatin was done. But feeble brachial artery flow and its pulsation partially appreciated. Wound was not much healthy.

So on second sitting 12th may 2016, under reginal anesthesia USG guided interscalene nerve block using 10ml of 0.5% of bupivacaine given by anaesthesiologist.

Supracondylar transhumeral amputation along with freshing of wound done. But still brachial artery flow & pulsatation only appreciated. For that embolectomy with fogarty catheter no. 4 was done.

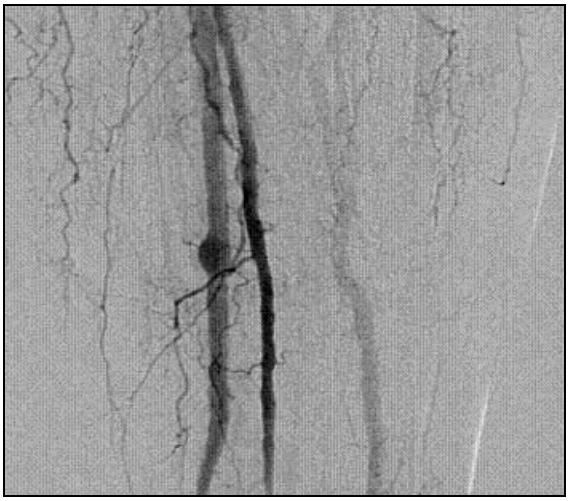
Typically this is done by inserting a catheter with an inflatable balloon attached to its tip into an artery, passing the catheter tip beyond the clot, inflating the balloon, and removing the clot by withdrawing the catheter. The catheter is called Fogarty, named after its inventor Thomas J. Fogarty.



Fogarty arterial embolectomy catheter is a device developed in 1961 by Dr. Thomas J. Fogarty to remove fresh emboli in the arterial system [1]. It consists of a hollow tube with an inflatable balloon attached to its tip. The catheter is inserted into the blood vessel through a clot. The balloon is then inflated to extract it from the vessel [2]. It is available in different lengths and sizes, and is often colour coded by size [3]. Because it is less invasive than ordinary surgery, it reduces the chance of postoperative complications. It is also use for removal of adherent material or fibrous material, by Fogarty adherent clot catheter. Post operative patient has better wound healing.

Case 2

One year back on 10th may 2015, A 60 year lady has presented with right leg pain in AIIMS, Patna with chief complain of acute numbness and coolness of her right foot which was sudden in onset. The right popliteal and pedal pulses were absent, and an arteriogram showed a normal iliac and superficial femoral arteries with occlusions of the popliteal and tibial arteries. She has history of DM, HTN and two episode of CVA



Pain, coolness and numbness increases day by day. Over the period of time, she began to experience progressive calf claudication associated with falling ankle pressures. A repeat arteriogram revealed diffuse narrowing of the superficial femoral and popliteal arteries.

Patient was admitted in hospital for two weeks. Repeated dressing and debridment of wound done. Initially believing that the diffuse tubular narrowing was possibly layered thrombus, we began a regional low-dose thrombolytic infusion. But no improvement in the appearance of the femoral or popliteal arteries.

Finally limb goes into ischemia that lead to gangrene of right leg due to arterial emboli treated simply with trasfemoral supracondylar amputation without interventional embolectomy under spinal anesthesia using 3ml of 0.5% bupivacaine heavy using 25 gauge spinal needle by anaesthesiologist in standard manner. And following which only LMW heparin was use which causes prolong wound healing time.

Conclusion

The Fogarty balloon application technique is safe and useful for the removal of residual thrombus and show better wound healing and circulation even after amputated limb than the only use of LMW heparin.

References

1. Sugimoto T, Kitade T, Morimoto N, Terashima K. Pseudo aneurysms of peroneal artery: treatment with Trans catheter platinum coil embolization. Ann Thorac Cardiovasc Surg. 2004; 10(4):263-5. PubMed
2. Bandy WD, Strong L, Roberts T, Dyer R. False aneurysm--a complication following an inversion ankle sprain: a case report. J Orthop Sports Phys Ther. 1996; 23(4):272-9. View Article Pub Med
3. Edwards H, Martin E, Nowygrod R. Nonoperative management of a traumatic peroneal artery false aneurysm. J Trauma. 1982; 22:323-6. View Article Pub Med
4. Skudder PA, Gelfand ML, Blumenberg RM, Fulco J. Tibial artery false aneurysm: uncommon result of blunt injury occurring during athletics. Ann Vasc Surg. 1999; 13:589-91. 10.1007/s100169900304.View Article Pub Med
5. Kurian J, Pillai SCB, Chapple D, Frost RA. Pseudoaneurysm of peroneal artery following ankle fracture. J Foot Ankle Surg. 2003; 9:233-5. 10.1016/S1268-7731(03)00095-X.View Article
6. McKee MA, Ballard JL. Mycotic aneurysms of the tibioperoneal arteries. Ann Vasc Surg. 1999; 13(2):188-90. 10.1007/s100169900240.View Article Pub Med
7. Toyota N, Kimura F, Yoshida S, Mitsui N, Mochizuki T, Naito A *et al*. Peroneal artery aneurysm treated by transcatheter coil embolization and temporary balloon occlusion in Behcet's disease. Cardiovasc Intervent Radiol. 1999; 22(3):257-9. 10.1007/s002709900379.View Article Pub Med
8. Brown SL, Busuttil RW, Baker JD, Machleder HI, Moore WS, Barker WF. Bacteriologic and surgical determinants of survival in patients with mycotic aneurysms. J Vasc Surg. 1984; 1:541-547. 10.1067/mva.1984.avs0010541.View Article Pub Med
9. Kocakoc E, Bozgeyik Z, Ozgocmen S: Spontaneous

occlusion of a traumatic false aneurysm of the peroneal artery. J Ultrasound Med. 2003, 22 (12): 1391-3.PubMed
10. Grewe PH, Mugge A, Germing A, Harrer E: Occlusion of pseudo aneurysms using human or bovine thrombin using contrast-enhanced ultrasound guidance. Am J Cardiol. 2004, 93 (12): 1540-2. 10.1016/j.amjcard.2004.02.068.View Article Pub Med
11. Vaidhyanath R, Blanshard KS. Treatment of a popliteal artery pseudo aneurysm. Radiol. 2003; 76(903):195-8.
12. Albrechtsson U, Einarsson E, Tylen U. Complications secondary to thrombectomy with the Fogarty balloon catheter. Cardiovasc Intervent Radiol. 1981; 4:15-16.
13. Dobrin PB. Balloon embolectomy catheters in small arteries. 1. Lateral wall pressures and shear forces. Surgery 1981; 90:177-185
14. Chidi CC, DePalma AG. Atherogenic potential of the embolectomy catheter. Surgery. 1978; 83:549-557.
15. Stemerman MB, Spaet TH, Pitlick F, Cintron J, Lejnieks I, Tiell ML. Intimal healing. Am J Pathol. 1977; 87:125-137.
16. Moore S. Thromboatherosclerosis in normolipemic rabbits: a result of continued endothelial damage. Lablnvest. 1973; 29:478-487.
17. Friedman M, Byers SO. Aortic atherosclerosis intensification in rabbits by prior endothelial denudation. Arch Pathol. 1965; 79:345-356.
18. Foster JH, Carter JW, Graham CP, Edwards WH. Arterial injuries secondary to the use of the Fogarty catheter. Ann Surg. 1970; 171:971-978.