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RESEARCH ARTICLE

BILATERAL SYMMETRICAL ISOLATED MID POPLITEAL ARTERY OCCLUSION - A MIRROR IMAGE.

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Abstract

Bilateral symmetrical isolated mid popliteal artery occlusion is a rare case. Such cases have been reported with popliteal artery entrapment syndrome^(1,2,3). We report a young patient with bilateral symmetrical isolated mid popliteal artery occlusion with bilateral critical limb ischemia with arteritis, after ruling out popliteal entrapment syndrome, managed successfully with bilateral popliteal angioplasty. This is the first case report of bilateral symmetrical isolated mid popliteal artery occlusion in the absence of popliteal artery entrapment syndrome.

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Introduction:-

Bilateral symmetrical isolated mid popliteal artery occlusion is very rare and such cases have been reported with bilateral popliteal artery entrapment syndrome^(1,2,3). So far no case report of bilateral symmetrical isolated mid popliteal artery occlusion have been published in the absence of popliteal artery entrapment syndrome. Here we present a case of bilateral symmetrical isolated mid popliteal artery occlusion with bilateral critical limb ischemia in a 35 year old male with arteritis.

Case Report:-

A 35year old male patient presented with C/O claudication pain in both legs for 6 months, discoloration of right 2nd toe and left 4th and 5th toe for 2 months, non-healing ulcer left foot for 2 months and rest pain both foot for one month. H/O left 4th toe amputated one month back. No H/O tobacco abuse. He was a recently diagnosed diabetic with no other medical illness. General examination was normal. Local examination showed left 5th and right 2nd toe

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gangrene with absent left 4th toe (amputated) and ulcer over dorsum of left foot. Pulse examination showed bilateral absent pulses distal to superficial femoral artery with B/L ABPI of 0.25.

Blood investigations were normal except for raised ESR and CRP, suggestive of arteritis⁽⁴⁾. Wound culture was negative. ECHO showed mild hypokinesia with 52% ejection fraction. CT Angiogram showed bilateral symmetrical isolated chronic total occlusion of mid popliteal artery as a mirror image (Fig -1).



Fig -1:-CT Angiogram showing B/L symmetrical isolated mid popliteal artery occlusion – A mirror image.

There was no positive finding for popliteal artery entrapment syndrome on duplex ultrasound examination. Patient was started on steroids. Once the level of CRP came down, with adequate glycemic control, DSA was done using B/L antegrade femoral access, which showed B/L mid popliteal artery occlusion (Fig 2A,2B) with good run off till ankle, with no other features of popliteal artery entrapment syndrome. Lesion crossed on both sides with .014 guide wire and angioplasty done using 5mm*100mm balloon (Fig - 3A,3B). Post angioplasty DSA showed B/L patent mid popliteal artery with good run off till ankle (Fig - 4A,4B).



Fig -2A DSA showing Left mid popliteal artery occlusion.



Fig -2B DSA showing Right mid popliteal artery occlusion.



Fig 3A:-Left popliteal artery
Angioplasty



Fig 3B:-Right popliteal artery
Angioplasty



Fig 4A:- Post angioplasty DSA showing
patent Left mid popliteal artery



Fig 4B:-Post angioplasty DSA showing
patent Right mid popliteal artery

Distal pulses were palpable on both sides post operatively with B/L ABPI-1. Patient was relieved of rest pain. Wound left for demarcation. Patient discharged with dual antiplatelets and steroids. On follow up left 5th toe and right 2nd toe were amputated. wound healed well.

Discussion:-

B/L symmetrical isolated popliteal artery occlusion is very rare. So far such case reports have been published with B/L popliteal artery entrapment syndrome^(1,2,3). The major symptom of popliteal artery entrapment syndrome is intermittent calf claudication and the symptoms are atypical and paradoxical⁽⁵⁾. Investigations to diagnose popliteal artery entrapment syndrome include measurement of distal pressures with an ultrasound Doppler scan during calf muscle contraction and relaxation⁽⁶⁾, which on a significant change in distal pressure (positive result) need more detailed examination. CECT and MRI are useful in detecting popliteal artery occlusion as well as anatomical relationship between popliteal artery and its surrounding structures⁽⁷⁾.

Angiography remains the mainstay of investigation in diagnosing popliteal artery entrapment syndrome. The diagnosis is considered when atleast two of the following angiographic features are apparent⁽⁸⁾.

1. Medial deviation of the proximal popliteal artery.
2. Focal occlusion of the mid popliteal artery.
3. Post-stenotic dilatation of the distal popliteal artery.

Since our patient presented with typical symptoms of critical limb ischemia, popliteal artery entrapment syndrome was not suspected during clinical examination. CT Angiogram showed B/L symmetrical isolated chronic total occlusion of mid popliteal artery. To rule out popliteal artery entrapment syndrome, we did B/L duplex ultrasound examination which showed no extrinsic compression on popliteal artery with provocative maneuver.

DSA showed B/L symmetrical isolated mid popliteal artery occlusion with good collateral around knee joint with distal popliteal artery reformation and good run off till ankle with no other angiographic features of popliteal artery entrapment syndrome. Hence we proceeded with B/L popliteal artery angioplasty⁽⁹⁾ with successful outcome.

Conclusion:-

B/L symmetrical isolated mid popliteal artery occlusion in the absence of popliteal artery entrapment syndrome has not been reported so far. Our case is a B/L symmetrical isolated mid popliteal artery occlusion with B/L critical limb ischemia with arteritis. This is the first case report of B/L symmetrical isolated mid popliteal artery occlusion in the absence of popliteal artery entrapment syndrome.

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