Non-reconstructable peripheral Vascular disease of the lower extremities in ten patients – What can we do for limb salvage

(We treated them with R.V.P.)

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- We present a series of ten patients with non-re-constructable peripheral vascular disease (PVD).
- Secondary to arteriosclerosis and vasculitis
- Treated with retro grade venous perfusion for the purposes of enhancing neovascularization to releve rest pain and promote wound healing
- Response to treatment was evaluated both clinically based on pain-free, wound healing capacity over time and ankle/ brachial Index (ABI) measurements and by imaging using CT angiography.

- Our aim is to treat patients with end- Stage PVD as an alternative To amputation.
- Most common causes were due to arteriosclerosed macrovascular lesions , and microvascular lesions with vasculitis and rong intra-arterial injection .
- Prognosis is confirmed by pulse Doppler , ABI and Ct angiography
- our ten patients presented with threatining non-reconstructable disease due to calcific and fibrocalcific disease in the distal vasculature , tissue necrosis and gangrene.

- Percutaneous transluminal angioplasty (PTA) have a variable therapeutic efficacy , with patients resulting in partial revascularization and higher rates of restenosis, especially in infrapopliteal arteries.
- In an effort to reduce the already high incidence of amputation our alternative RVP approaches have been proposed

MATERIALS AND METHODS

- This study was done in vascular department, El Azhar University
- The criteria for inclusion wer : rest pain, tissue loss non-healing ulcer, or non healing Surgical amputation site for greater than three months.
- All patients at this advanced stage were considered candidates for amputation.
- Drug used in RVP and procedure are enumerated in 4 (pictures)

PICTURE SHOWING DRUGS IN RVP AND THE PROCEDURE

Drugs in Syring (100cc)

Elevation and tornique

Oxygen Tension elevated to 86

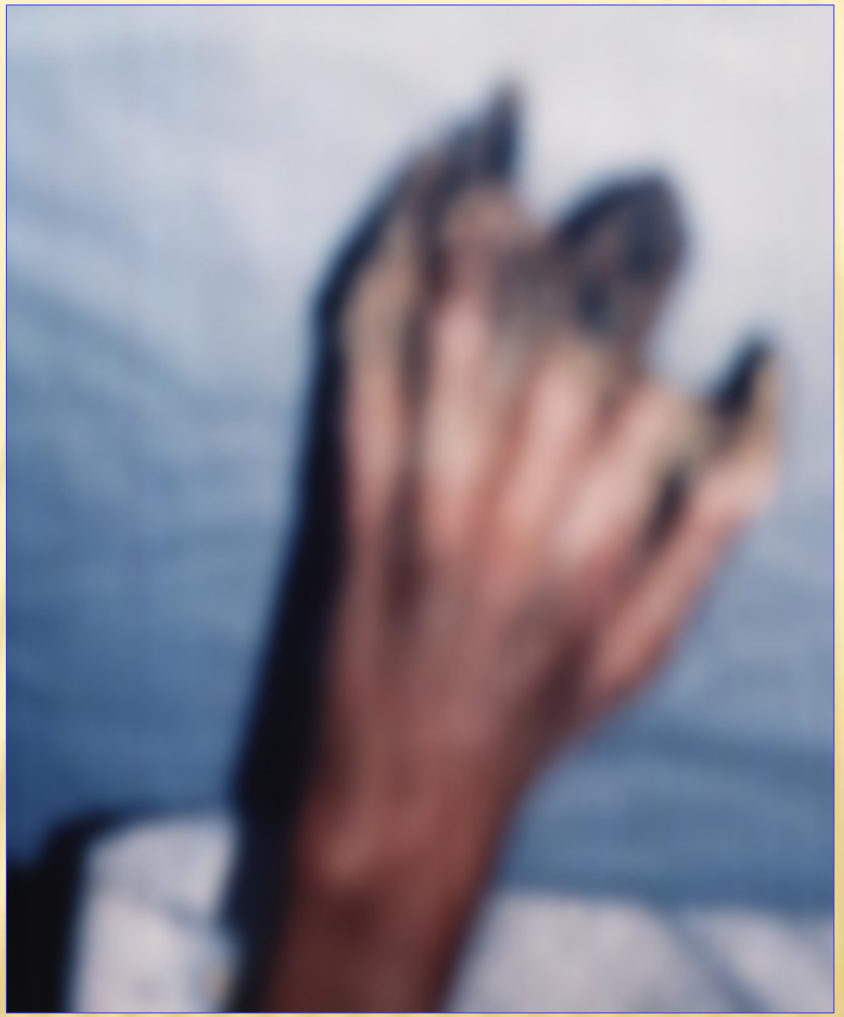
Pushing the drugs through cannula

OUTCOMES ASSESSMENTS

- The purpose of this study was to evaluate the safety and feasibility of RVP for advanced PVD in ten patients.
- No inflammation, infection or local necrosis in the injected part
- Clinical data (pain assessment , healing , ABI , were evaluated
- CT angiography imaging follow up was done

RESULTS

- Pictures shows our patients whith decision of ampatations .



Pictures show our patients before and after RVP (not amputated)

before

After

before

After

before

After

Before

After

Before

After

Before

After

Before

After

before

After

Before

After

Before

After

: DISCUSSION

- **Ferreira first introduced RVP in 1989 for cases of diabetic neuropathic pedal ulcers .[2] Diabetic and ischaemic ulcers are manifestations of breakdown in blood supply as a result of impairment in microcirculation and therefore remain resistant to systemic therapy.**

- In this study, we have used a basic combination of heparin, Gentamicin
- natrium bicarbonate and lignocaine.
- Heparin prevents intra vascular thrombosis due to venous stasis, natrium bicarbonate combats local acidosis and makes the injection less painful and intravascular lignocaine leads to reduction of vascular tone and increases perfusion.

- Two specific drugs gentamicin and pentoxiphylline were used; gentamicin was used to control local infection of the wound as it has broad-spectrum antibacterial property. Though we have used gentamicin in all cases of diabetic foot ulcers; specific antibiotic can be selected on the basis of culture and sensitivity.
- Alpha-prostine induce Vasodulatation and prevent platelets

- **RVP improves the cutaneous microcirculation in the diabetic patients, by shifting blood flow to superficial nutritive capillaries.**
- **Several basic and dynamic microcirculatory functions such as measurement of laserDoppler flux and cutaneous oxygen tension studied before and after RVP suggest that it leads to remarkable improvement of the cutaneous microcirculation, suggesting a better oxygen supply to the tissues after**

- **By application of contrast medium and with the help of nuclear medicine studies, it has been shown that the injected fluid penetrates in a retrograde direction into the foot in spite of primarily intact valves.**

CONCLUSIONS

- This simple technique of RVP therapy has many advantages. It promotes healing of pedal ulcer, decreases ischaemia, helps in shortening the duration of therapy and overcoming critical complications threatening the foot, and avoids mutilating surgery in patients with end-stage peripheral arterial disease.

Thanks