

POLYMERIC MEMBRANE* SILVER ROPE DRESSING FOR THE CONSERVATIVE TREATMENT OF DEEP ABSCESES IN DIABETIC FOOT PATIENTS

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INTRODUCTION

Patients with diabetic foot and secondary abscesses or plantar fascia involvement pose a challenging problem. Once the plantar fascia becomes involved in the infective process the recommended surgical treatment is to perform a long incision through the fascia in order to enable full drainage of the pus and allow closure by secondary intention.

Aim

Polymeric membrane silver rope dressing (PMSRD) is designed for difficult tunneling wounds, but never tried in diabetic wounds. We started to evaluate the PMSRD on 4 diabetic patients, 3 with plantar ulcers and 1 with an intramuscular thigh abscess.

METHOD

Patients suffering of infected diabetic foot with deep abscesses were treated with PMSRD. The rope was introduced into the abscess' cavities and changed twice weekly. All patients continued to receive advanced wound care and supportive standard care. During the treatment period all patients were monitored clinically, wounds photographed, laboratory markers examined and CT scans were repeated periodically as required.

Patient characteristics and outcome

Age / Sex	Diabetes type & duration	Osteomyelitis	Abscess location	Wound duration before treatment (m)	Treatment duration (months)	Follow up (months)
61 M	T2DM, 20y	Calcaneus	Plantar	9	4	7
54 M	T2DM, 19y	Calcaneus	Plantar	8	2	4
59 M	T2DM, 30y	4-5 MTS	Plantar	7	3	8
62 F	T1DM, 50yrs	No	Lt thigh	1.5	1.5	2

RESULTS

Four diabetic patients with difficult thigh and plantar abscesses were treated. All patients had long standing diabetes with micro & macro vascular complications. Wound condition had deteriorated in the 1.5 – 9 months prior to intervention. A complete recovery was achieved within 1.5 - 4 months without recurrence during a follow up of 4 – 10 months.

DISCUSSION

Incorporation of PMSRD in the armamentarium of diabetic foot treatments is feasible and may serve as an alternative to surgical procedures in selected cases.

This long incision may occasionally fail to heal, require extensive reconstructive surgery, get secondary infections and may lead to possible loss of the foot. Polymeric membrane silver rope dressing* (PMSRD) is a multifunctional, antimicrobial wound filler that continuously cleanses, absorbs and moistens. It was designed for difficult tunneling wounds, but never tried in diabetic wounds.

Case 4

62 years, Type 1 Diabetes Mellitus for 50 years. History: Mild retinopathy, mild nephropathy. PAD. Diabetic foot. Present: Lt thigh intramuscular abscess, in spite of frequent surgical drainage recurrent acute abscess formation.



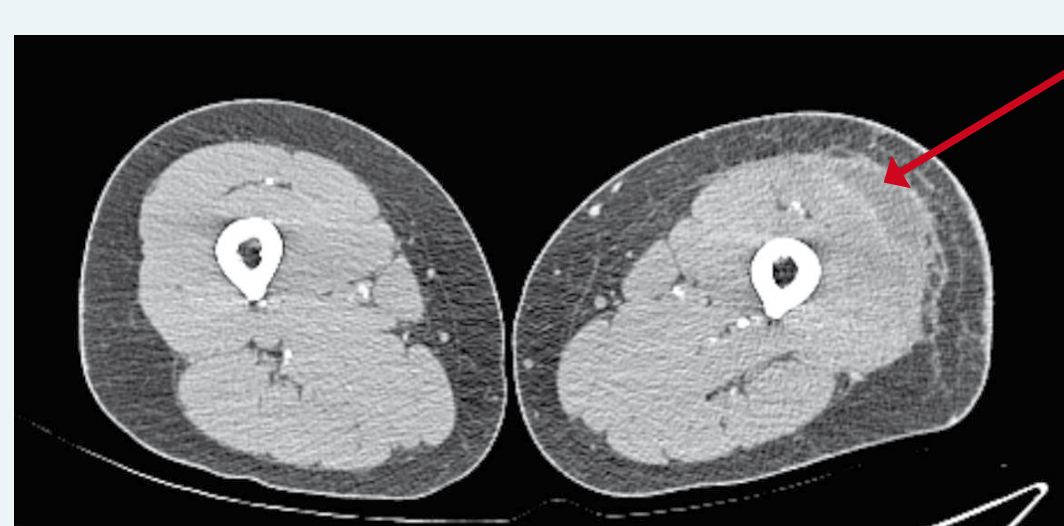
After surgical drainage. The arrow indicates the depth of the fistula. We were able to insert the PMSRD all the way.



As the tunnel became shorter we could use the excess PMSRD to cover the cavity.



It took almost 3 months to close the 15 cm long fistula.



Left lateral vastus abscess 1.8X1.5X15 cm, and accompanying fasciitis.

After 2nd op 16/10/2011

Case 3

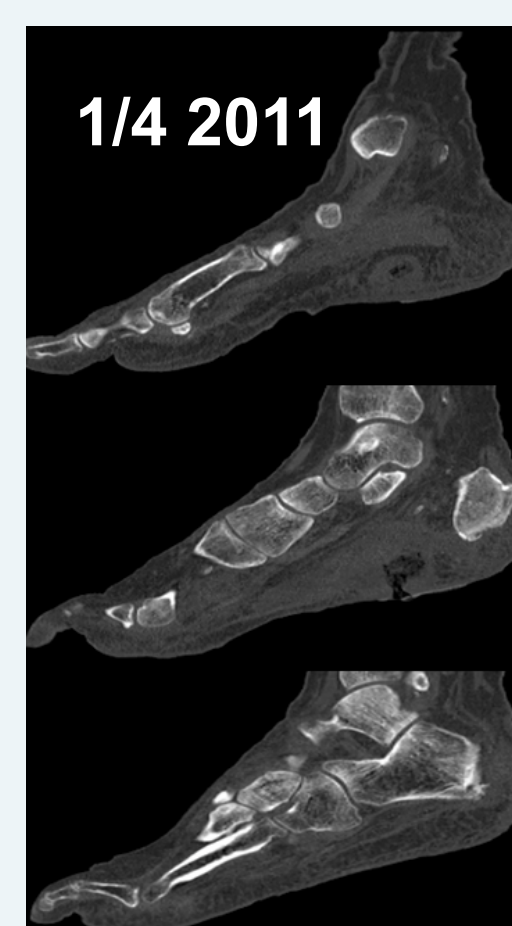
History: ischemic heart disease, congestive heart failure, hypertension, nephropathy, PAD, osteomyelitis of metatarsal bones left foot 2008. Present: Calcaneus osteomyelitis (necrotizing and gas forming). After 10 months of treatment with Topical hyperbaric oxygen treatment (THBO), low level laser treatment (LLLT) and topical care, suddenly developed acute plantar fasciitis & abscess starting from the 3-4 metatarsal area from the previously healed wound. Below knee amputation recommended but rejected by the patient. PMSRDs was added, the abscess and all the wounds healed after additional two months.



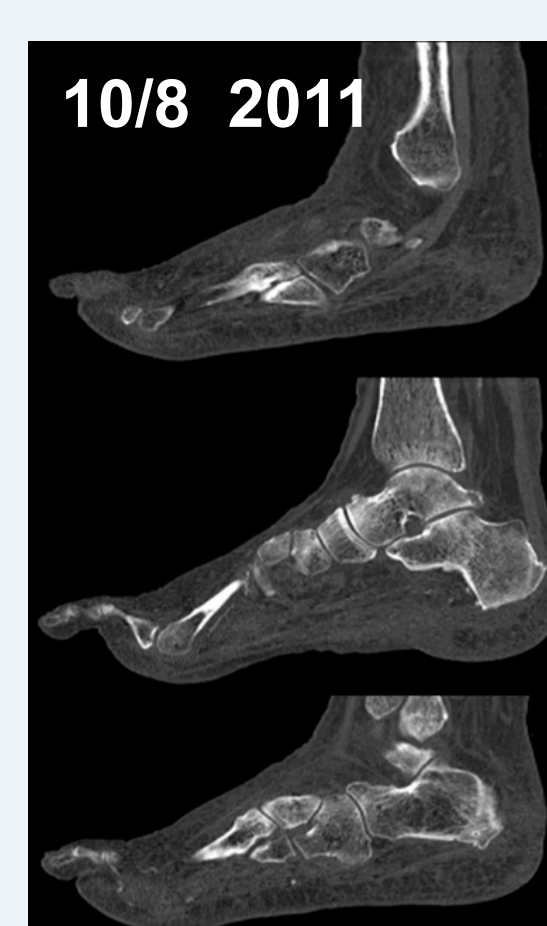
Treatment with PMSRD started on the 19/9 shortly after the previously healed wound had ruptured due to acute plantar fasciitis and abscess formation. The dressing was changed 2-3 x week. Foot completely healed within 6 months.

Case 1

61 years, Type 2 uncontrolled Diabetes Mellitus. History: Obese, retinopathy, severe peripheral neuropathy, severe nephropathy with chronic renal failure. Peripheral arterial Disease (PAD), ABI=0.57. Present: Diabetic Foot Lt. calcaneal osteomyelitis, plantar fasciitis and abscess formation, recurrent hospitalizations resistant to all treatment, possible amputation risk. Stopped all antibiotics that he had been on for 9 months and started treatment with PMSRD. The wound healed in 3.5 months, no recurrence at follow-up 10 months later.



CT shows massive plantar collection with air bubbles and bone fragments and erosive cortical process in the calcaneal region, c/w acute osteomyelitis



CT shows swelling of the soft tissue, arterial calcifications, no bone erosions, no fluid or air collections, distortion of the calcaneal bone, chronic changes no osteomyelitis (compared with previous CT)

Case 2

History: Obesity, hypertension, ischemic heart disease, severe left ventricular dysfunction, congestive heart failure, retinopathy, severe peripheral neuropathy, severe nephropathy with chronic renal failure. Peripheral arterial Disease (PAD), with calcified arteries. s/p digital amputations with osteomyelitis of Rt leg. Present: Diabetic Foot Lt. 5th MTS head osteomyelitis. After 6 months of treatment complicated with abscess in MTS 3-4, which endangered the foot, PMSRD was instituted. The wounds healed after 5 months, no recurrence at follow-up 10 months later.



3/2 during treatment with PMSRD, deep abscess visible on top right photo.

Follow-up 28/12