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Diabetic Neuropathic Ulcer: Collaboration, is this the solution?

Marg Ryan

Diabetes Educator

Wound Management Consultant

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Collaboration: What is it?

- Definition: A mutually beneficial relationship entered into by two or more organisations to achieve common goals, involving various individuals working together in joint planning and open communication

  Ref: http://www.nccev.org/resources/terms.html
- Integration of services
- Team work
- All team players focused on achieving the same outcome

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Health Professionals Involved in Care Plan

GP

Podiatrist

Endovascular Surgeon

Endocrinologist

Client

Orthopedic foot Surgeon

DNE/ Wound Consultant

Orthotist

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Background

- Mr. D is an active 66 year old with Type 2 Diabetes for 12 years
- Maximum OHA's ineffective in maintaining glycaemic control
- Referred to DNE for initiation of Insulin therapy to obtain optimal glycaemic control

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Background

- Blood glucose levels range
  - Fasting 6-9 mmol/l
  - Evening 8-22 mmol/l
  - HbA1c 9%
- Initial consultation involved routine foot inspection
- Neuropathic Ulcer on 1st Metatarso-phalangeal joint of right foot present for 12 months!

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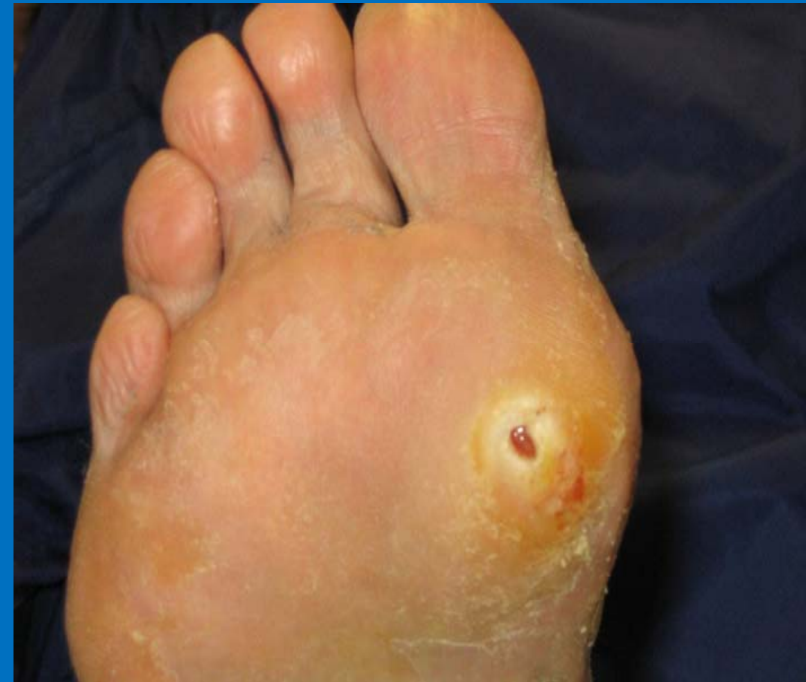
Background

- Wound measurements:

  0.5cm x 0.5cm

  Depth: 0.2cm
- Mr D was advised he would have to "*live with ulcer as it would never heal*"
- Management was daily application of elastoplast following shower



Referral High Risk Foot Clinic.

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Over View of Wound Management

- Initially debridement, hydrocolloid paste, foam & padding. Weekly review by podiatrist and DNE/Wound consultant

- Episode of infection managed with Ag dressing. GP prescribed antibiotics

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Over View of Wound Management

- Glycaemic control addressed by adjusting insulin dosage. Nocte protophane increased to address elevated FBGs progression to BD insulin injections
- Documentation and wound measurements indicated no advancement in wound healing.

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Role of DNE/Wound Consultant

- Monitor glycaemic control and insulin management
- Consultation re: application of appropriate wound products
- Psychological support
- Advocate for other management options
- Liaison with health professionals to obtain optimal care
- Facilitate attendance and ongoing reviews at High risk foot clinic

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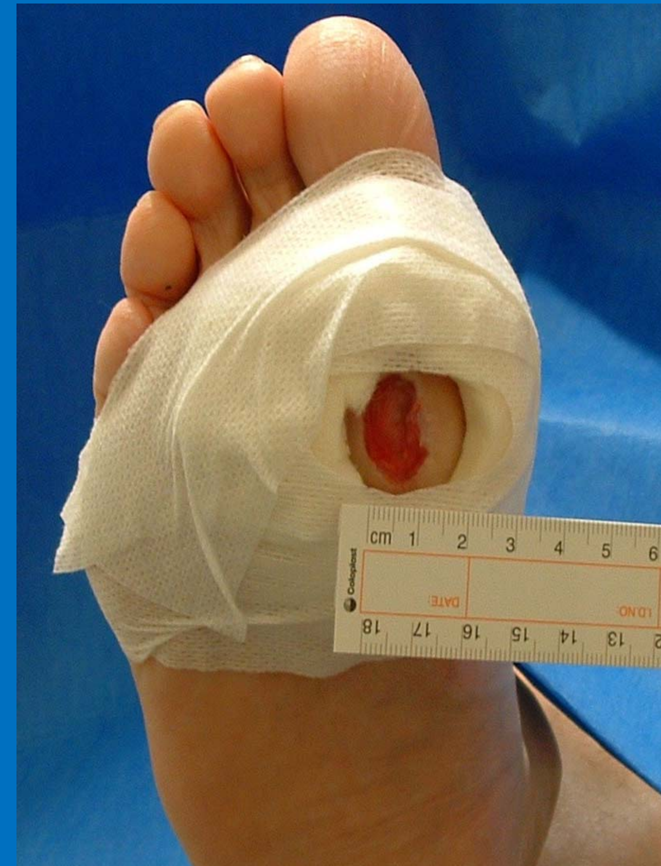
Role of Podiatrist

- Determine causative factor for delay in wound healing- neurovascular assessment
- Debridement of wound
- Wound dressing regime in consultation with DNE/ Wound consultant.
- Application of pressure relieving felt padding



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Role of Podiatrist

- Arrangement of fore foot off loading shoe, Bledslow boot and finally total casting
- Ongoing communication in collaboration with DNE to GP Endocrinologist, Vascular Surgeon re requests for Antibiotics, X-rays, Bone Scans and Vascular investigations

Communication and Consultation

- Referral to Endovascular surgeon
- Vascular studies-normal femoral and popiteal pulses: poor dorsalis pedis and no posterior tibial pulses
- There was suggestion of amputation of the 1st toe
- Referral to foot surgeon
- Referral to private Orthotic clinic

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Pressure Relief

- Fitted for Bledsoe conformer diabetic boot ($250)
- Gait adjusted. Walking on ball of foot painful. Wearing boot 50% of time. Advised on correct walking technique
- Boot affected balance resulting in falls
- No evidence of reduction in ulcer size

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Factors Impacting on Healing

- Hyperglycaemia
- Pressure
- Stress- Psychological
- Peripheral Neuropathy
- Vascular Supply- (Not able to palpate pedal pulses or tibial pulses. Right anterior and posterior tibial artery occlusion)

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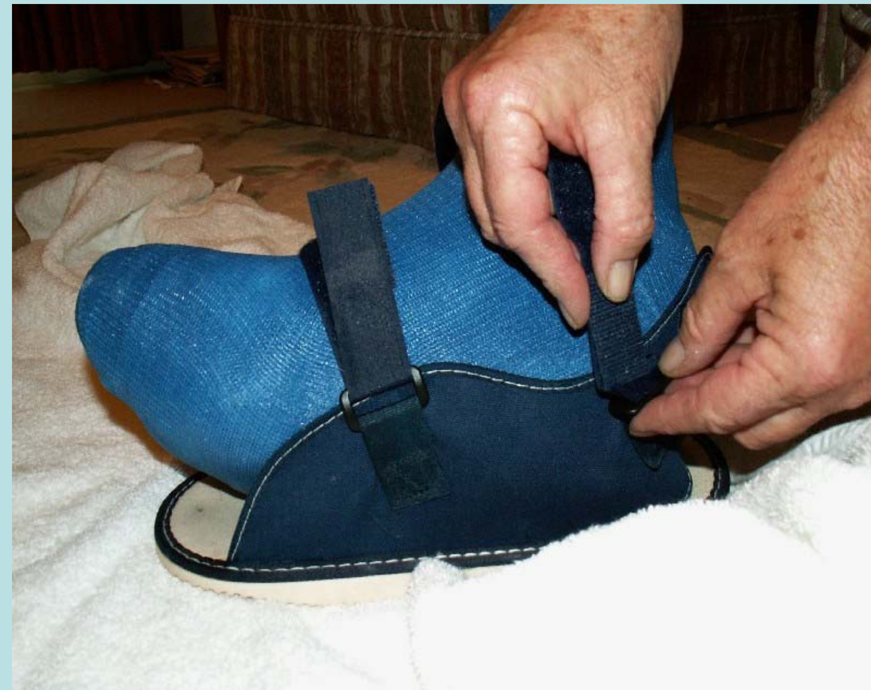
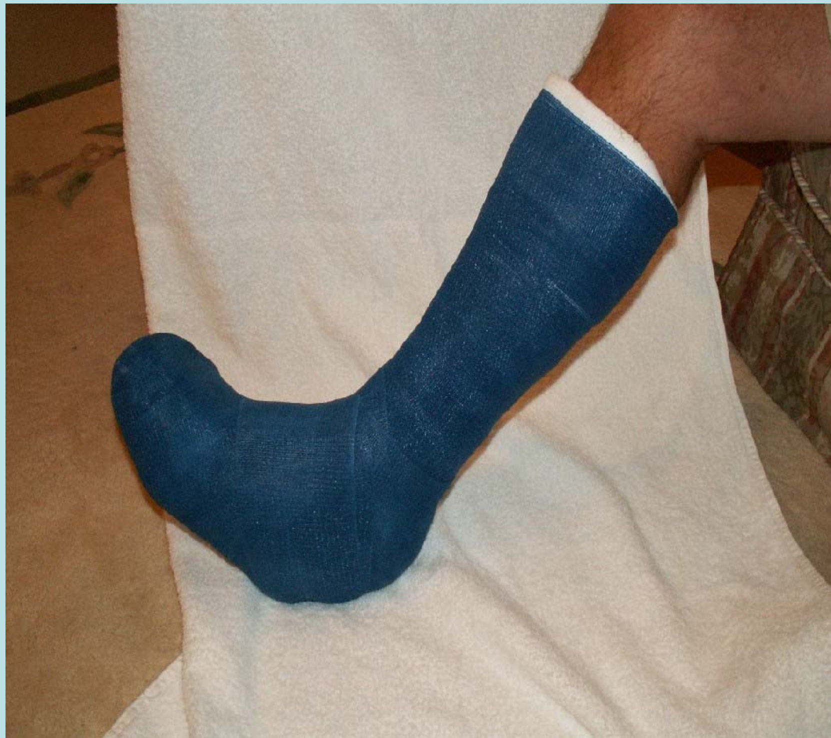
Total Cast





Local wound management gauze swabs!!

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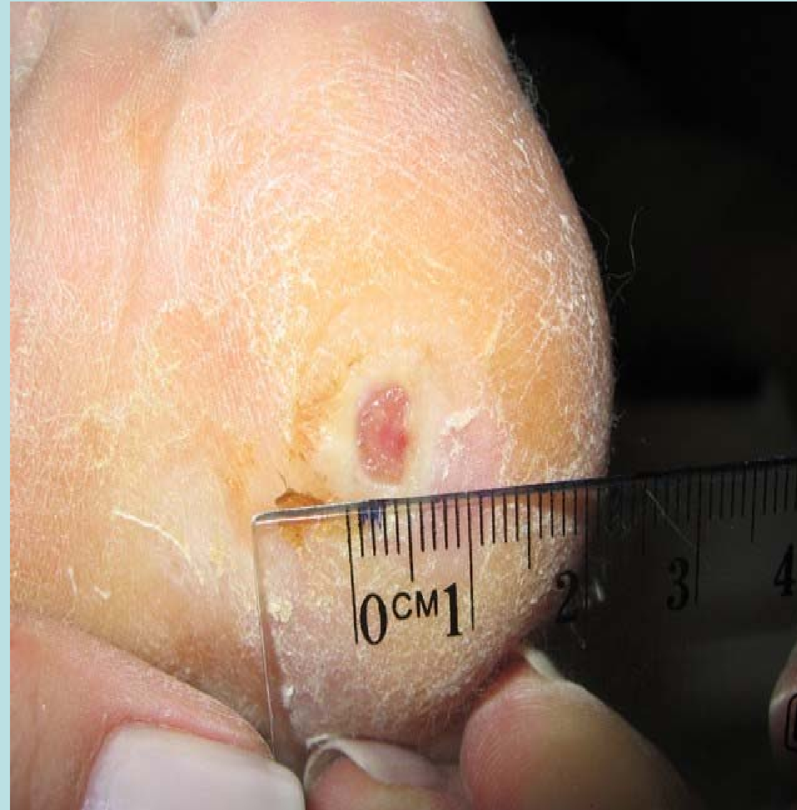
Status of wound during casting

- Ulcer two weeks post-cast application



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Healed wound

- Time frame:

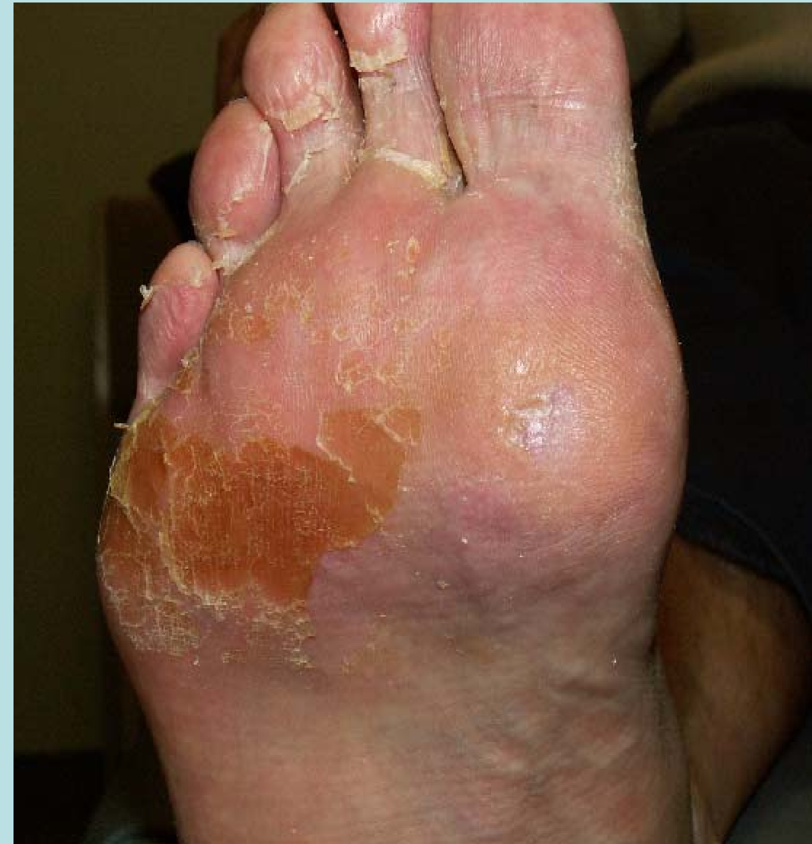
  Initial ulcer 12 months

  Commencement of Treatment 12 months

- Healed wound

  6 weeks post-casting

  Total financial cost $900 of casting



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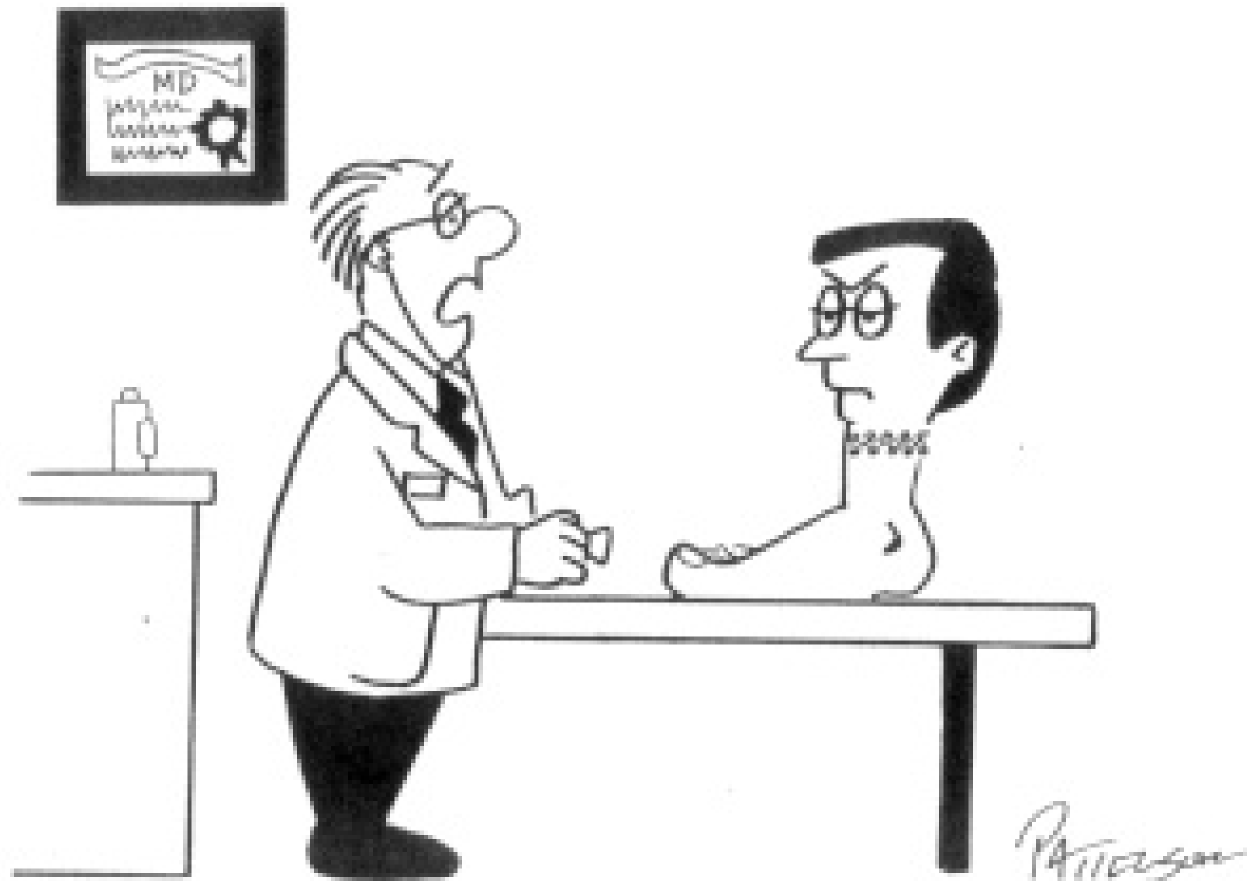
Time Line

26/05/2004	DNE	High Risk foot Clinic
01/06/2004	Podiatry appointment	Debridement/ wound Mx Padding
13/07/2004	Endocrinologist	Vascular report
04/08/2004	Endocrinologist	Vascular surgeon
14/08/2004	High risk foot clinic	Vas/S X-ray bone scan vascular studies
15/09/2004	Vascular	Endocrinologist
12/10/2004	High risk foot clinic	Ortoheel shoe
09/11/2004	High risk foot clinic	Referral to podiatrist Tasmania

Time Line

22/11/2004	Vascular appointment	Ulcer ↑ Mechanical off loading
14/01/2005	High risk foot clinic	Bledslow boot
18/01/2005	High risk foot clinic	Infection ref to Endo for A/B's
20/01/2005	Tasmania	Podiatry clinic
10/03/2005	Vascular referral	Orthopedic foot surgeon
24/03/2005	Orthopedic foot surgeon	Orthotic clinic
11/04/2005	Orthotist	Total Contact Casting (TCC)
30/05/2005	R/O TCC **HEALED**	Ref High risk foot clinic



"The surgery went well - we were able to save the foot after all."

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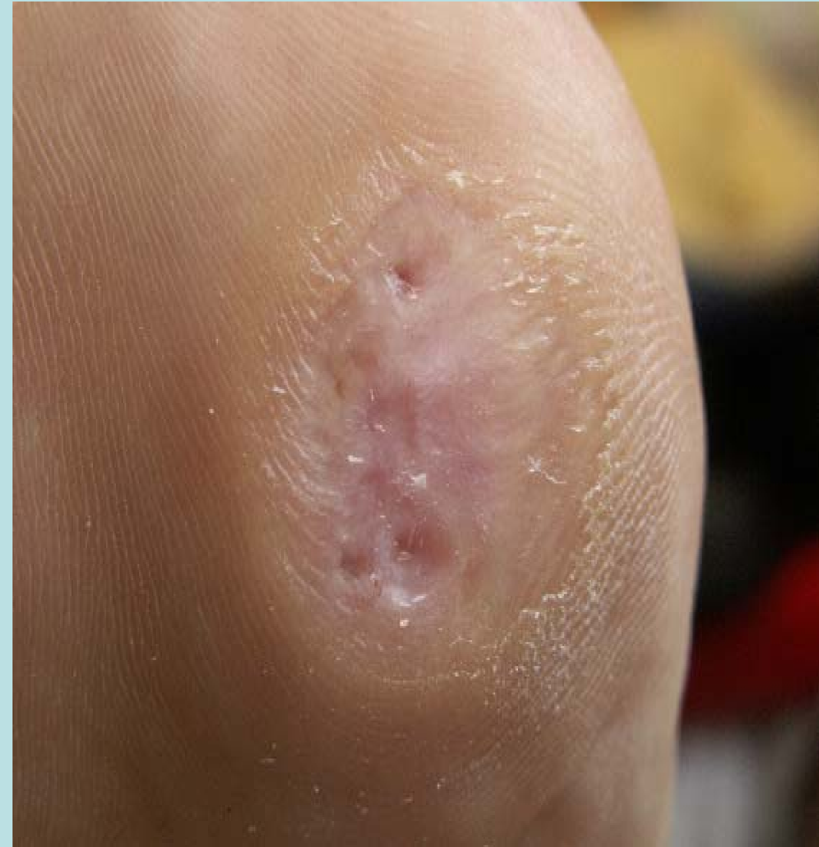
Long Term Management

- Importance of regular 6 week ongoing reviews
- Education of Mr. D to check foot daily and note any changes
- Proper foot wear
- Maintain optimal glycaemic control



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Mr D Commonwealth Games volunteer!

Acknowledgements

- Mr. D
- Central Bayside CHS High Risk Foot Clinic
- Melbourne Orthotics
- Endocrinologist
- Vascular and Endovascular Surgeon
- Orthopedic foot surgeon

References:

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