

Diabetic Feet? Who Cares?

Magdi E Greiss

MD, MChOrth, FRCS

...and Asa in the thirty and ninth year of his reign, **was diseased in his feet.** Yet he sought not the Lord, but the physicians. And Asa slept with his fathers in the one and fortieth year of his reign...

II Chronicles. 16

Avoiding Mistakes

Diabetes is on the increase – currently about 3% of the population of England and Wales and 120,000 people in Scotland have been diagnosed with diabetes. These figures are set to double by 2010.

UK figures
may *double* to
3 million by
2010!

- 50% or more people with diabetes are affected by diabetic neuropathy.
- It is the commonest cause of non-traumatic amputation of the lower limb.
- Diabetic foot clinic attendance reduces amputations by 40% and education in foot care reduces amputations by 85%.



Diabetes → Ulcer → Amputation

Pathophysiology

- Neuropathy
- Vasculopathy
- Sepsis
- Deformity

Diabetic Foot

- Ulcer
- Cellulitis
- Abscess
- Gangrene
- Necrotising Fasciitis



Coming events cast their shadow beforehand

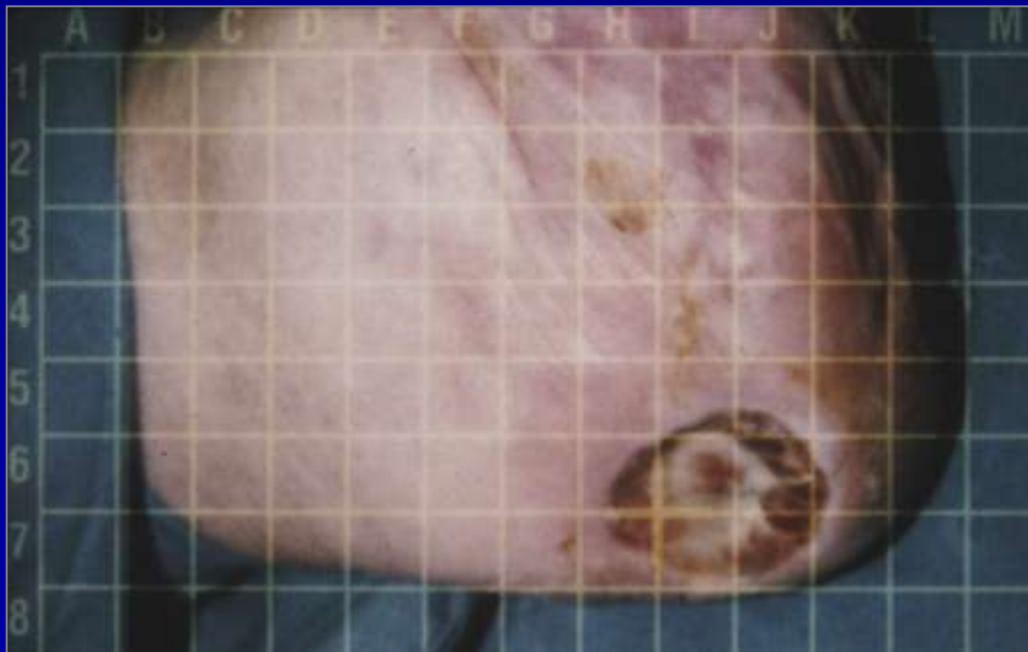
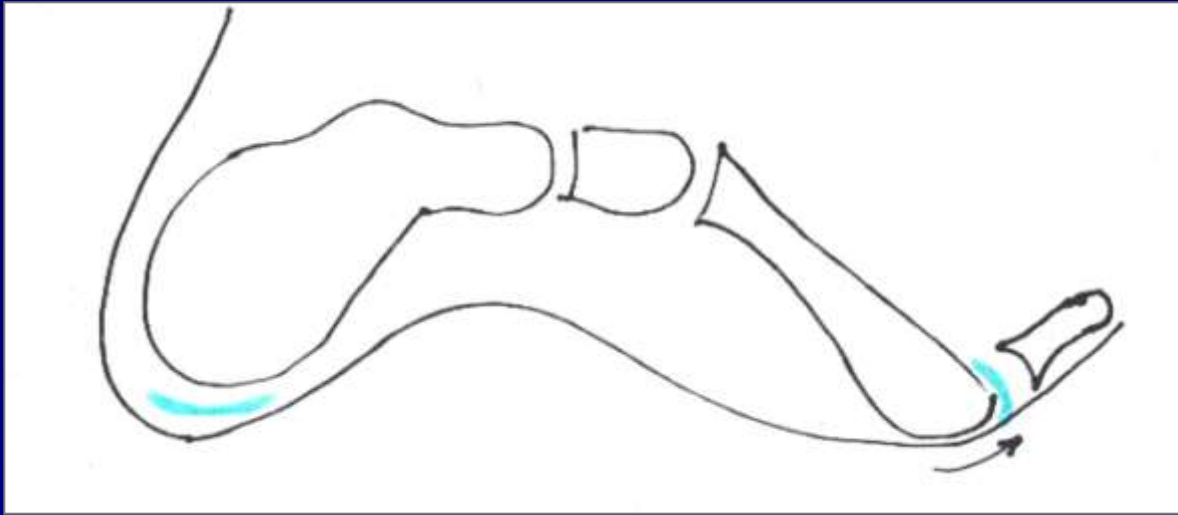
Thomas Campbell

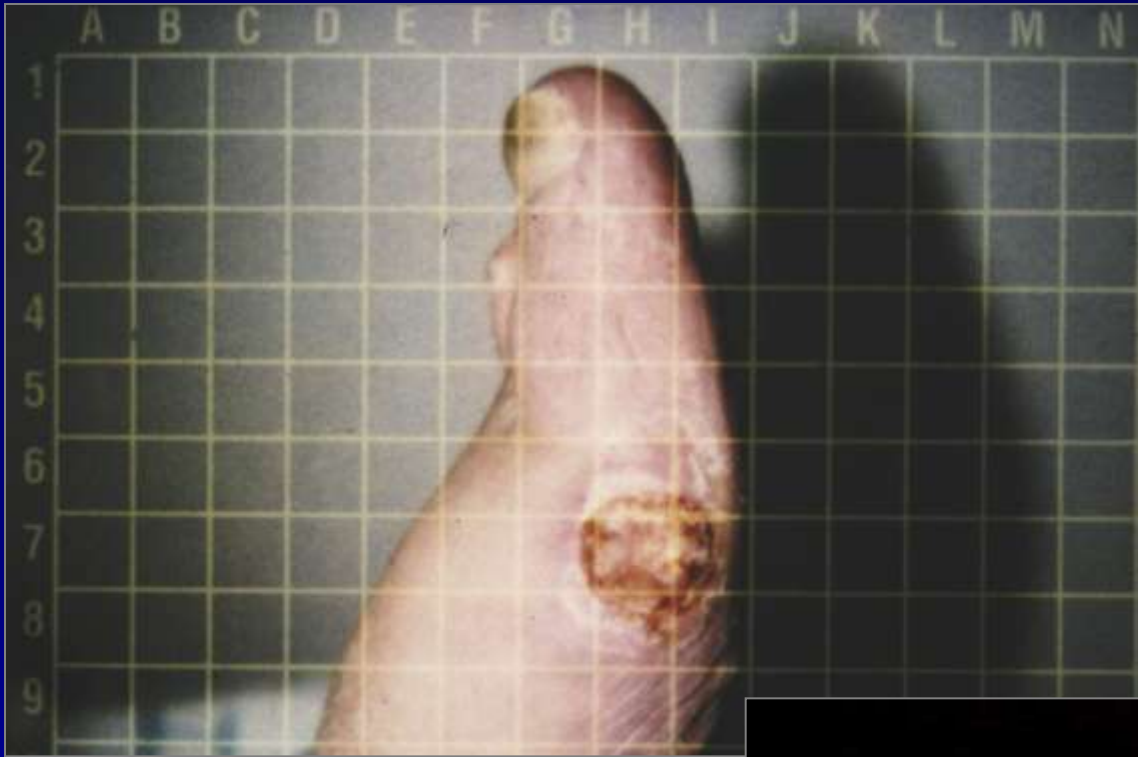
Coming Event	Shadow
Foot ulcer	Trauma Neuropathy PVD Joint stiffness Callosities

Cost of *single* Diabetic Foot Ulcer per year : \$28000

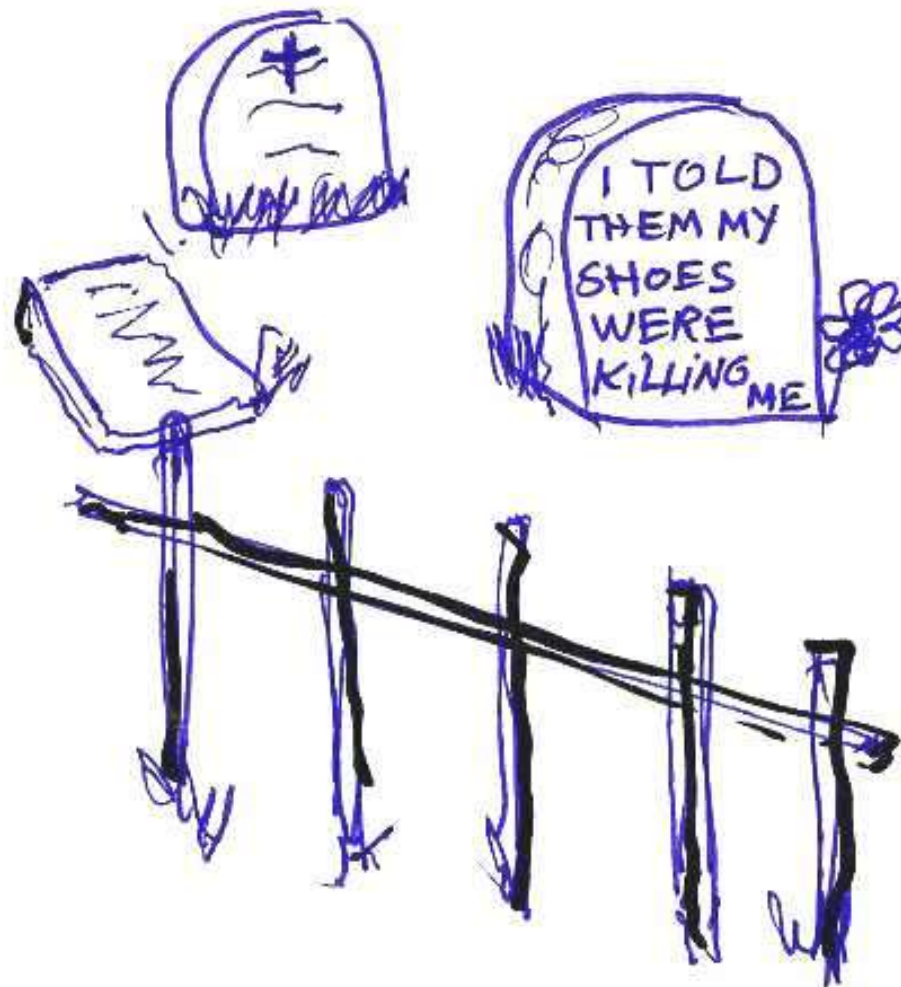


Diabetes and Pes Cavus









DIABETIC
GRAVEYARD.

Orthotist

P.O.P. Technician

Diabetologist

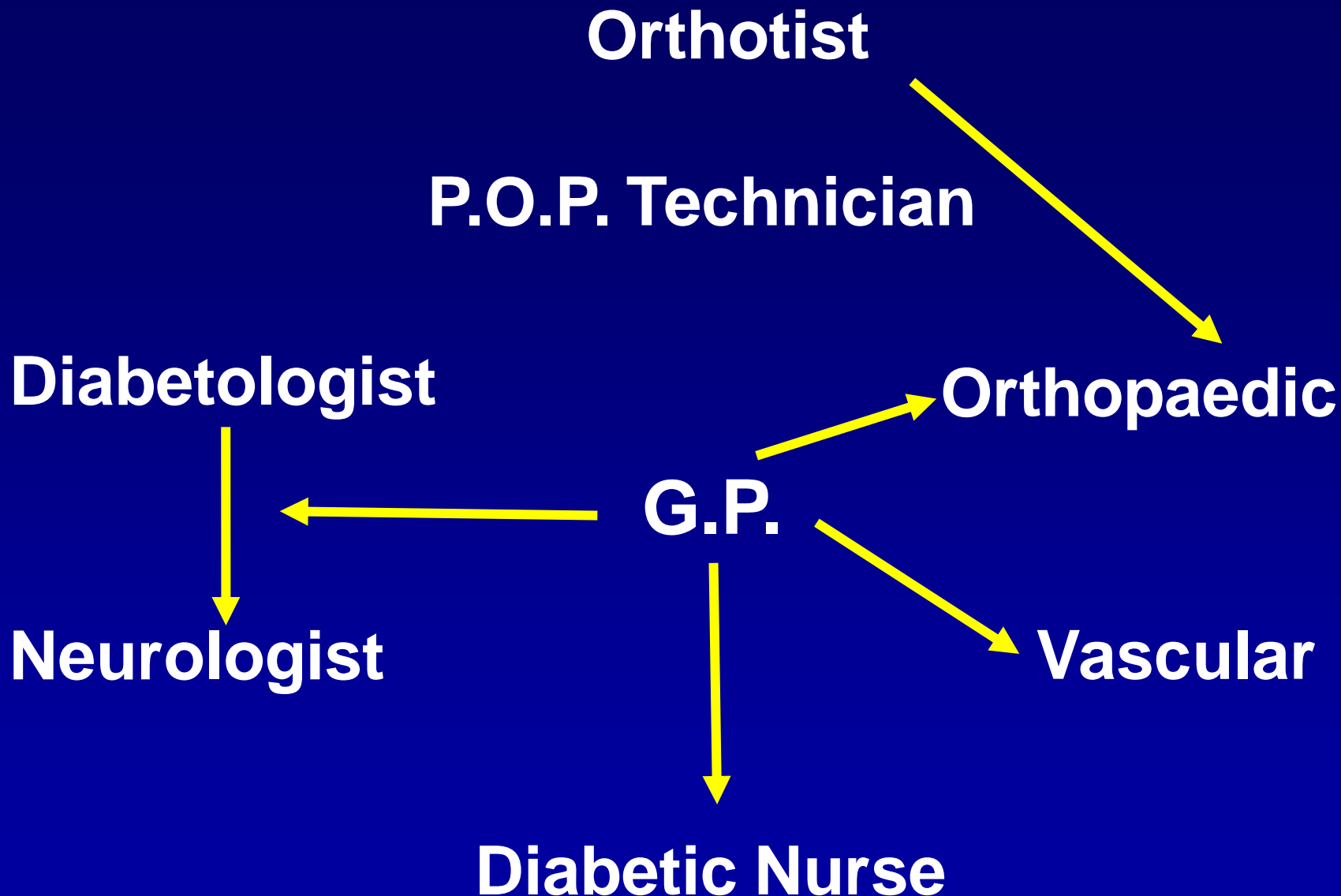
Orthopaedic

G.P.

Neurologist

Vascular

Diabetic Nurse



T ogether

E veryone

A chieves

M ore

Diabetic Foot Ulcers

Ischaemic Ulcer?

= Vascular surgeon

Neuropathic Ulcer?

= Team approach

Wagner – Meggitt classification 1970's



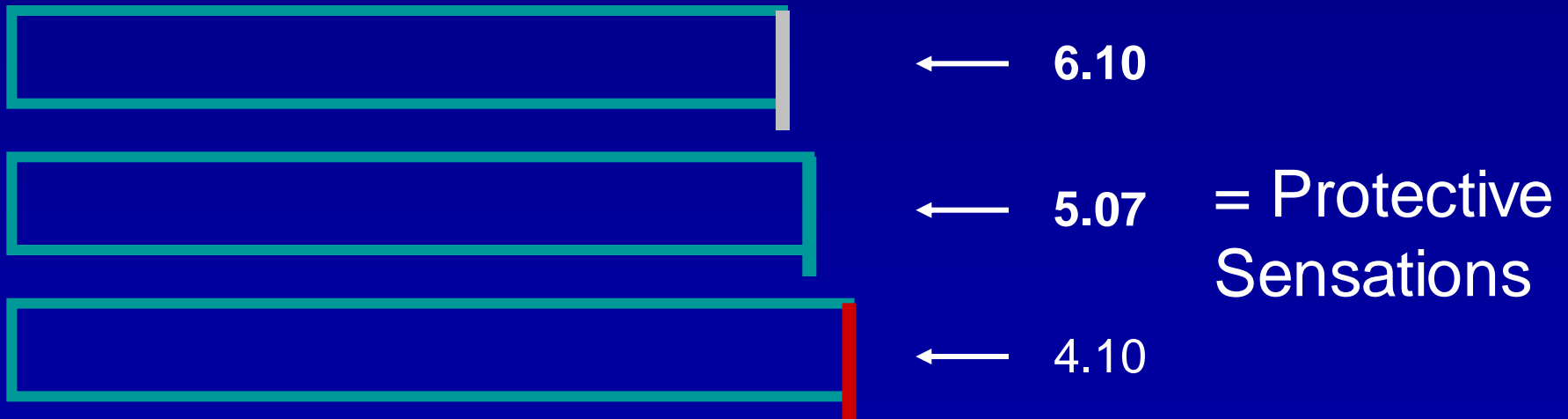
Brodsky 1993

Stage 0?

The warm insensate foot
= foot at risk

Diabetic Foot – Sensory Tests

- Tuning fork
- Cotton whisk
- Monofilaments



University of Texas, San Antonio

	1	2	3	4	5
A None					
B Sepsis					
C Ischaemia					
D Both					

Trevino et al

“The germ is
nothing; the
terrain where it
grows is
everything”

Louis Pasteur



Diabetic Foot Sepsis

D Stewart, S Trevino

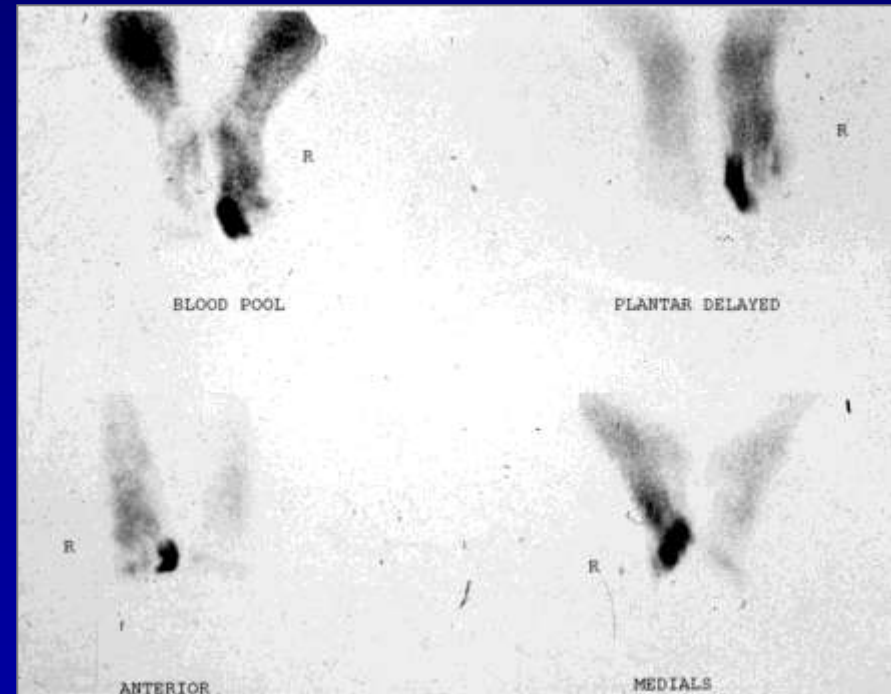
67 patients

MSSA **MRSA**

Amputation	15%	51%
Osteomyelitis	10%	40%
Mortality	5%	13%

Diabetic Osteomyelitis

1. TCQQM scan – non specific
2. Indium WC labelled scan – expensive
3. MRI e' Gadolinium
4. Leukoscan Tc antigranulocyte antibody Fab fragment



Diabetic Osteomyelitis

Sam Hakki, Florida 1997

74 patients

33 Long bones

23 Prosthetic joints

18 Diabetic feet

Diabetic Osteomyelitis

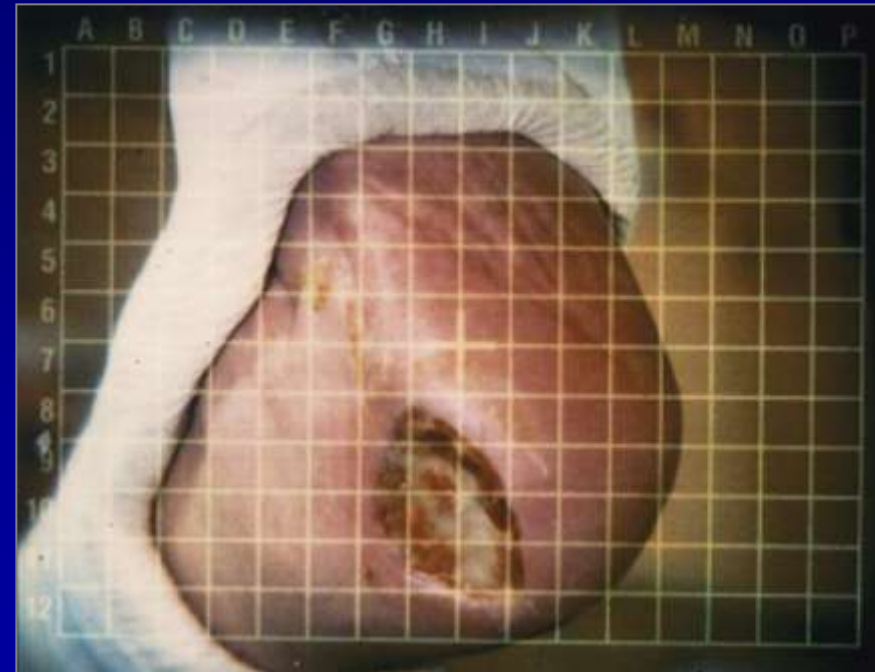
Sam Hakki 1997

%	Leuko	WBC	Bone
Sensitivity	93	85	92
Specificity	89	75	52
Accuracy	90	79	74

Diabetic Foot

Total Contact Casting

- Avoids point pressure
- Spreads loads
- Redistributes weight
- Reduces swelling
- Rocker effect





T.C.C.

Air Cast

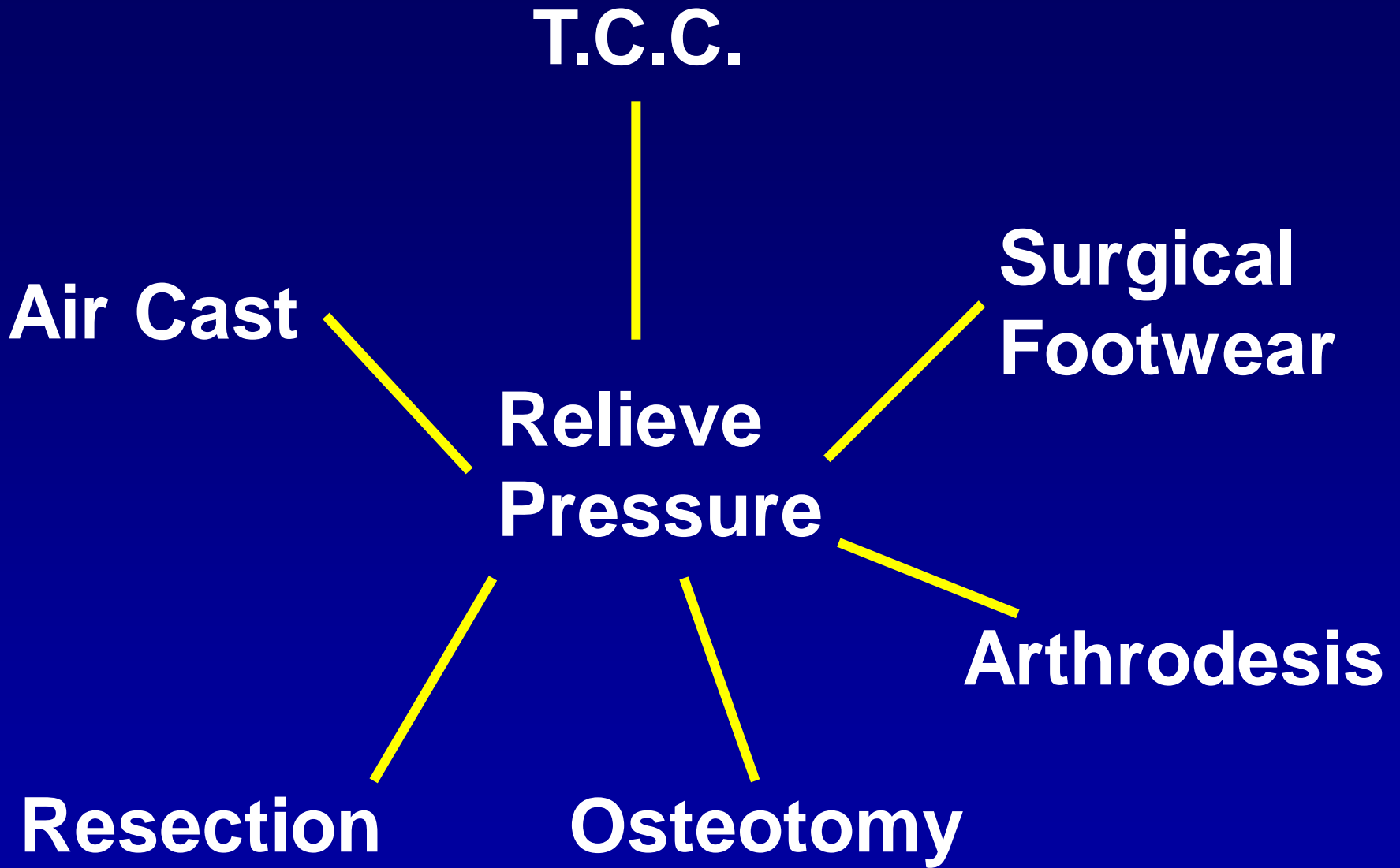
**Surgical
Footwear**

**Relieve
Pressure**

Arthrodesis

Resection

Osteotomy



Diabetic Foot Ulcers

Recurrence

25% if compliant

57% if non compliant

Edmonds et al

1986

Diabetic Osteomyelitis

Don't amputate

Don't dissect

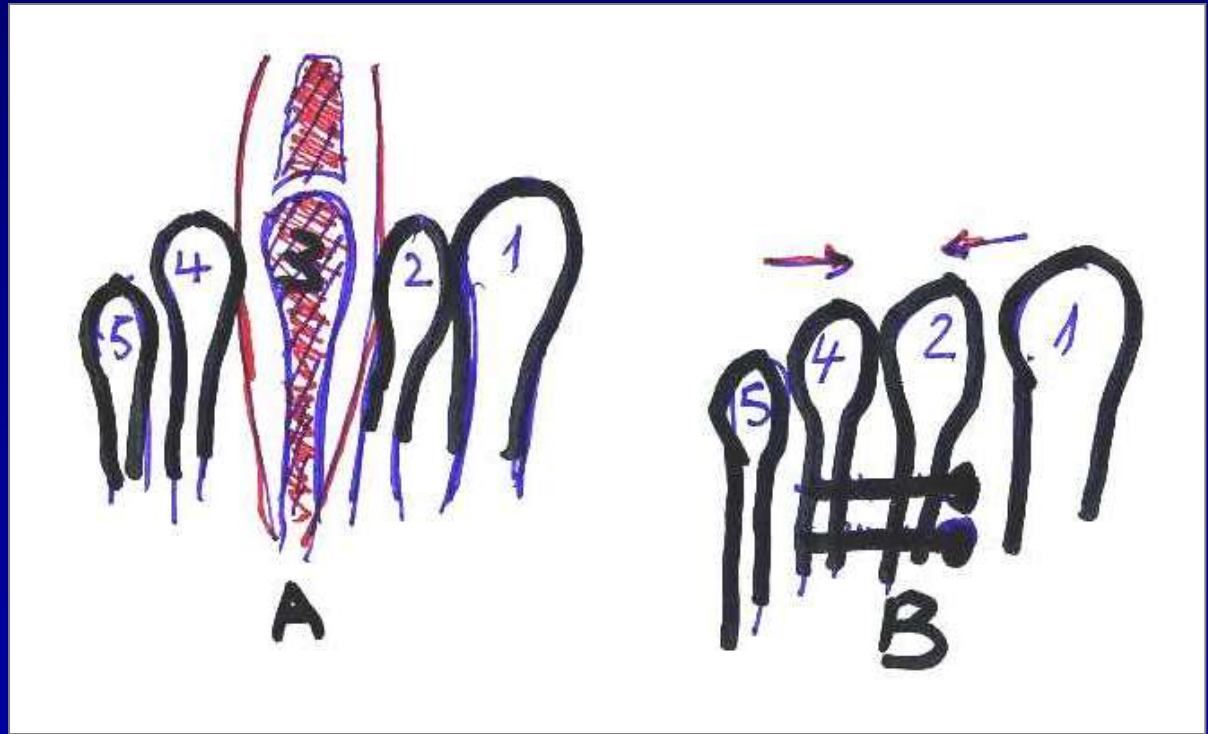
Do simple surgery

Just cut it out



R D Lawrence 1941

Middle Rayectomy





Maggots

Larvae

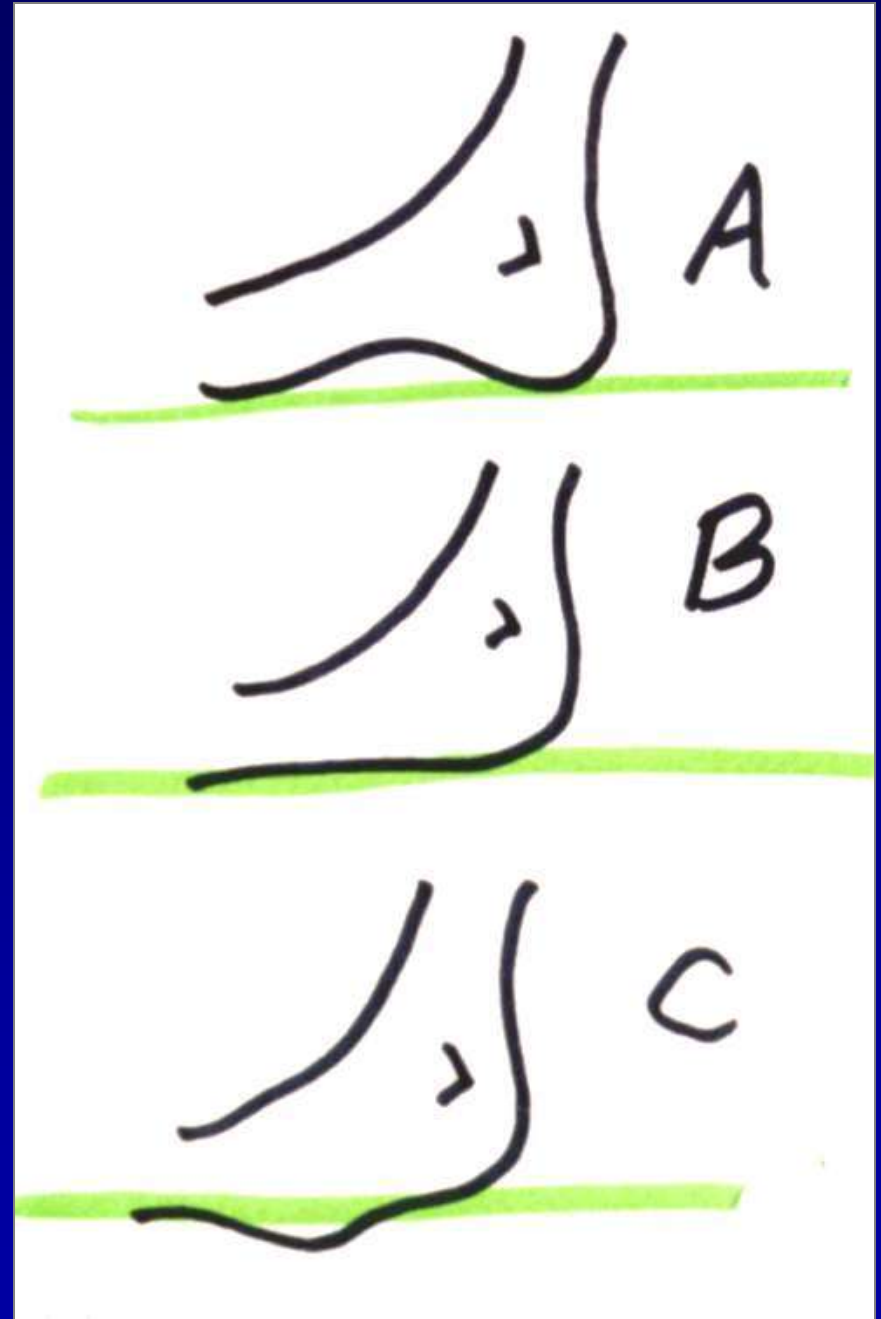
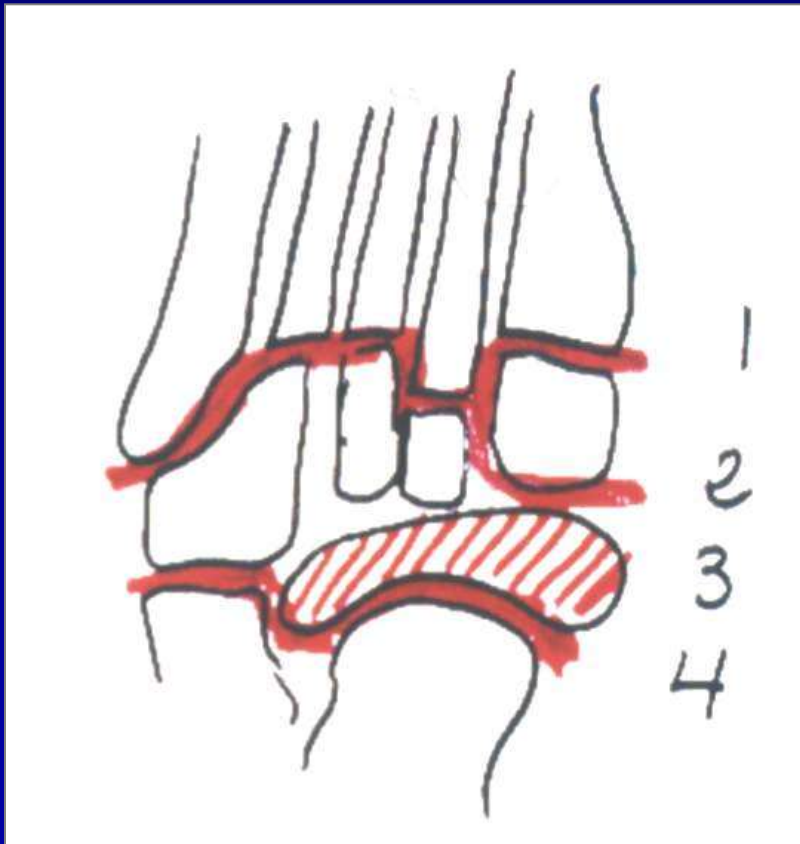
Biosurgery

Charcot Foot

Jean Martin Charcot 1881

- Common in neuropathy
- Diagnosis often missed
- Can be treated *and* prevented

L C Schon Baltimore Charcot Foot



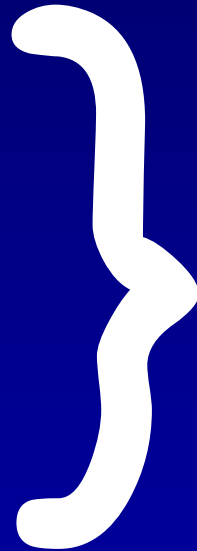
Eichenholz Grading

1. Dissolution
 - Oedema
 - Osteopenia
 - Fragmentation
 - Fractured/Dislocation
2. Coalescence
3. Consolidation

Diabetic Foot

Charcot 0.1 – 5% of diabetics

Chronic
Progressive
Deforming
Inflammatory



Anthropathy
+
Loss of sensation

* Osteoclastic resorption ↑ in Charcot

L C Shon, AOFAS 2004



Cuboid is
the
Enemy!

Charcot Foot

Options for surgery

- Amputation
- Osteotomy
- Osteotomy
- Fusion in situ
- Fusion with correction



Diabetic Foot Disease

- Multifactorial
- Variable aetiology
- ↑ Hospital admissions
- Cost/benefit ratio

This slide is already out of date!

Diabetes accounts
for about **9%** of
hospital costs.

Total NHS cost is
about **2 billion** a year.

Diabetic foot
disease is

Preventable

**“I marvel at a society
which pays a surgeon a
very large sum of
money to take a
patient’s leg off, but
none to save it!!”**

George Bernard Shaw







