

Foot Assessment for the patient with Spina Bifida

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110 years of caring
1902 - 2012



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Overview

1. Foot complications in Spina Bifida
2. Clinical foot assessment
3. Basic wound care



Spina Bifida Clinic Camden Hospital



110 years of caring
1902 - 2012

- Retrospective file audit, n=22.
 - 14 male, 8 female
 - Mean age 29.8, range 18-50 years
- 12 (55%) people had experienced lower limb wounds
 - 4 (18%) current,
 - 8 (36%) previous.
- 2 (9%) people had undergone a trans-tibial amputation (one bilaterally).



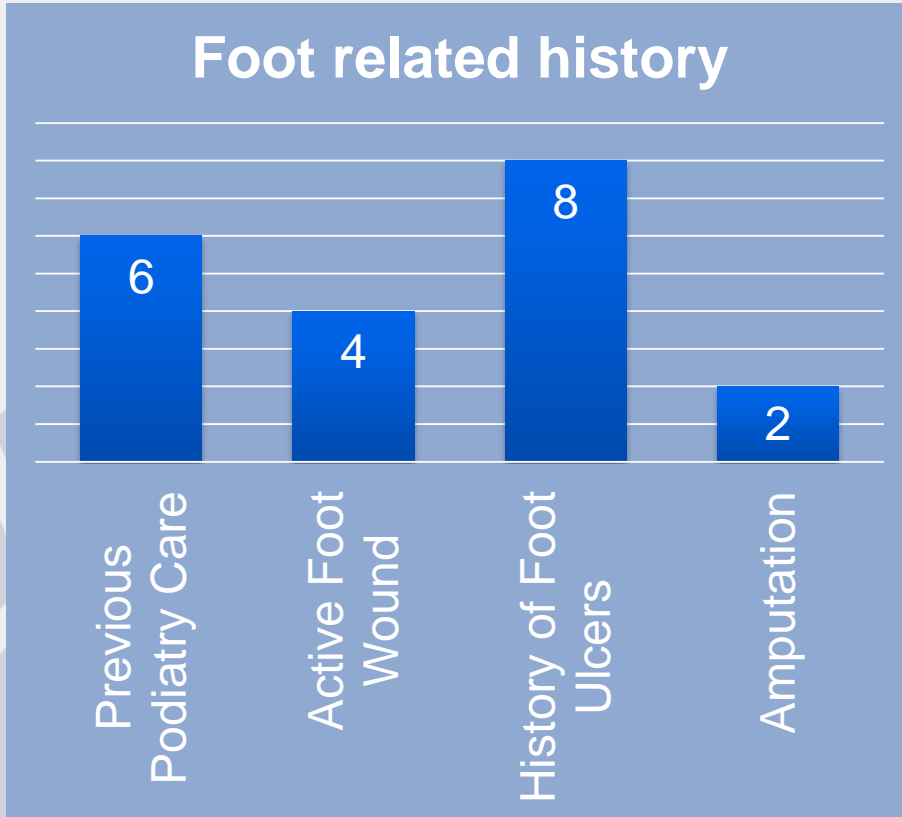
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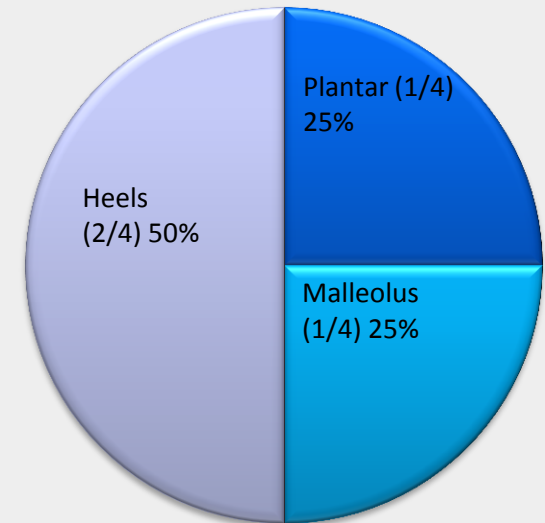


110 years of caring
1902 - 2012

Foot related history



Active Foot Wound Location

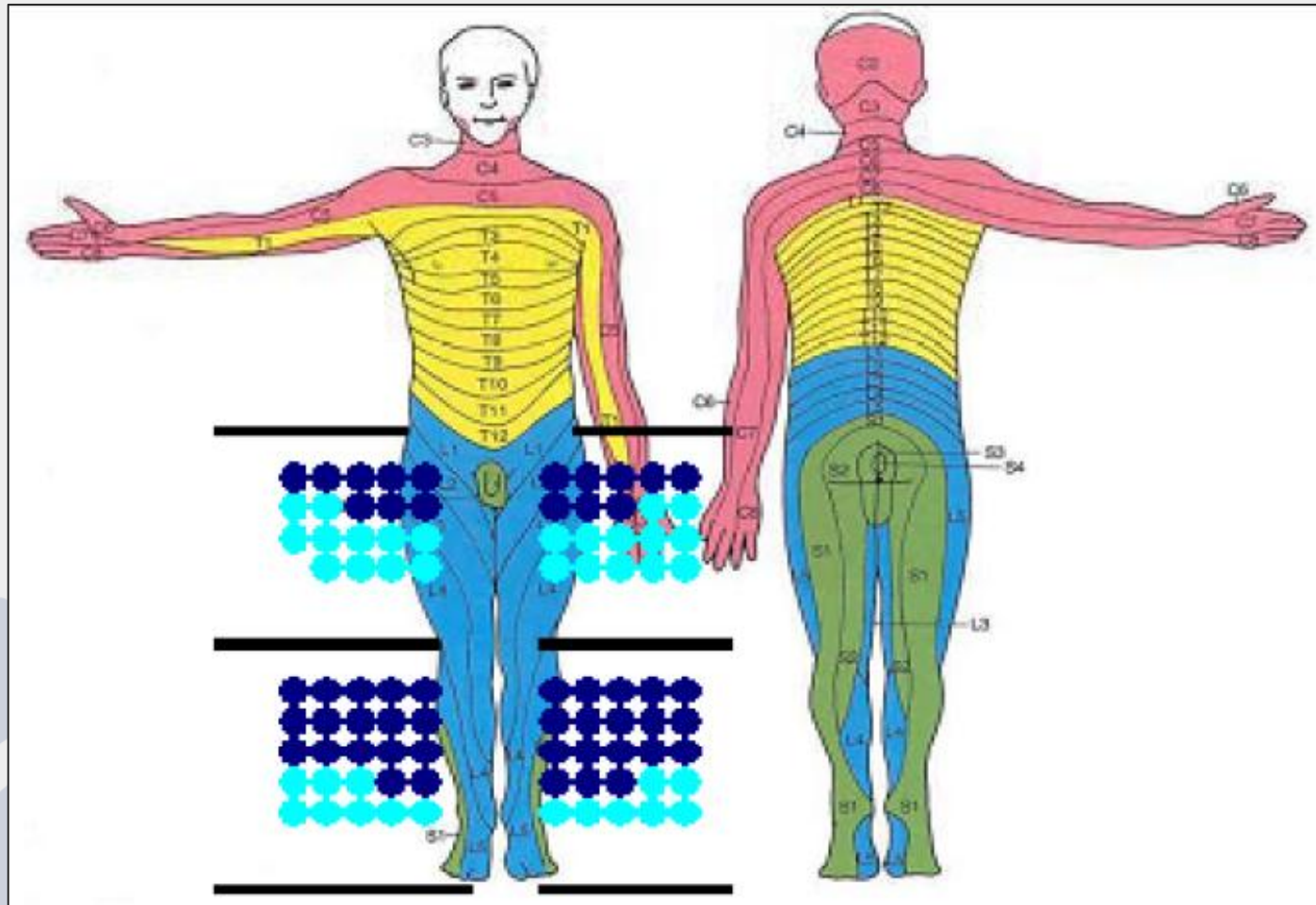


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Foot complications in Spina Bifida

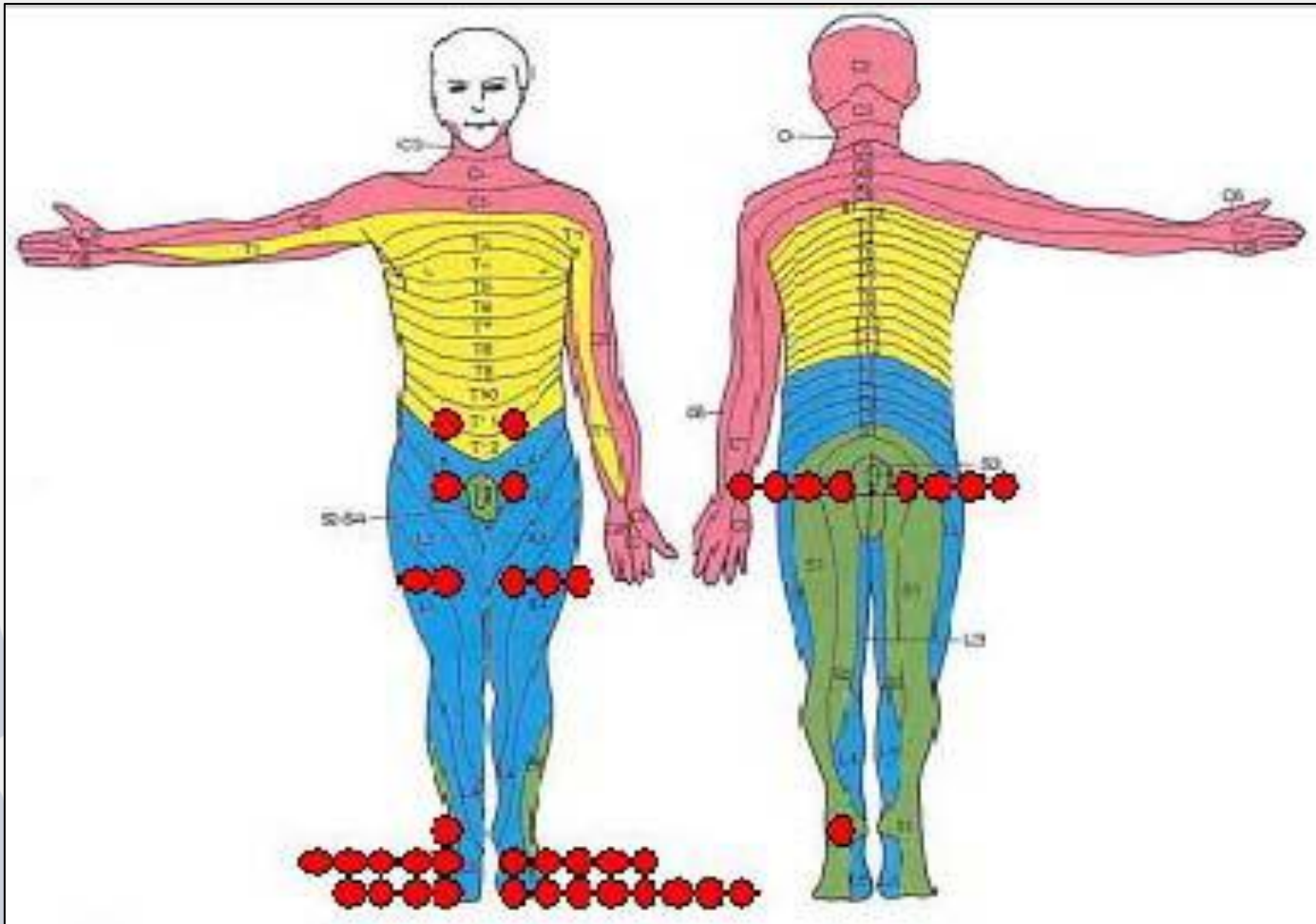
- Plaum et al 2006, Cerebrospinal Fluid Research
 - Questionnaire based study of 193 patients with myelomeningocele- 87 respondents
 - Examined wound history, medical condition, function and living factors
- 71 people (82%) reported wounds
 - 26 (30%) current;
 - 45 (52%) previous





Localization of sensory deficits (n = 87 patients). Light blue spots indicate reduced sensibility and dark blue spots missing sensibility.

Plaum et al CSF Research 2006, 3:14



Localization of pressure sores (n = 26 patients). Every spot indicates the location of one sore.

Plaum et al CSF Research 2006, 3:14



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Foot complications in Spina Bifida

- Wounds were associated with
 - Memory deficit (p=0.02)
 - Chiari malformation (p=0.02)
 - History of wounds (p=0.004)
- *Not* associated with
 - Hydrocephalus, syringomyelia, nutrition, BMI, smoking, activity, employment, living arrangement.

Plaum et al CSF Research 2006, 3:14



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Mechanism of Injury

- Wounds occur nearly exclusively in areas of patchy or absent sensation
- Pressure
 - Constant
 - Repetitive
- Trauma (transfers)
- Tissue viability/ perfusion



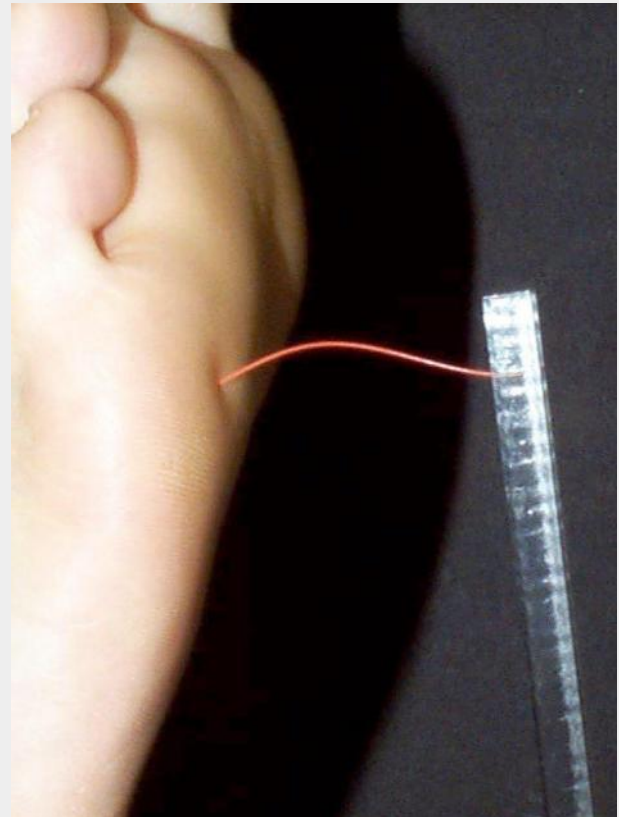
Foot Assessment

- Basic foot neurological
- Basic foot vascular
- Basic foot structure



Neurological assessment

- Muscle strength
- Reflexes
- Sensation
 - 10g monofilament



Vascular Assessment

- Palpation of pedal pulses still mainstay of clinical assessment
- Listening to pedal pulses with handheld Doppler gives audio clues as to the flow & quality of vessel walls
- Visual assessment of hair/ skin/ nail condition
- Formal investigations as indicated



Dorsalis Pedis



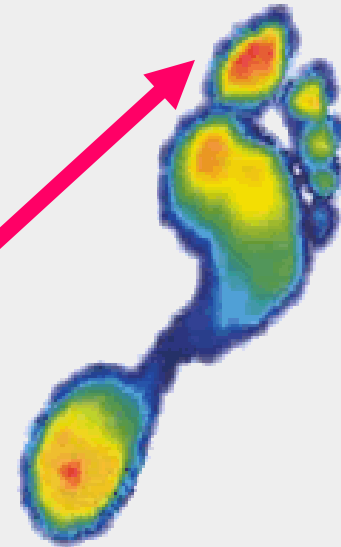
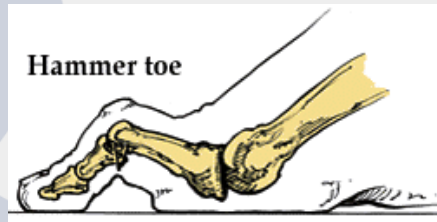
Tibialis Posterior

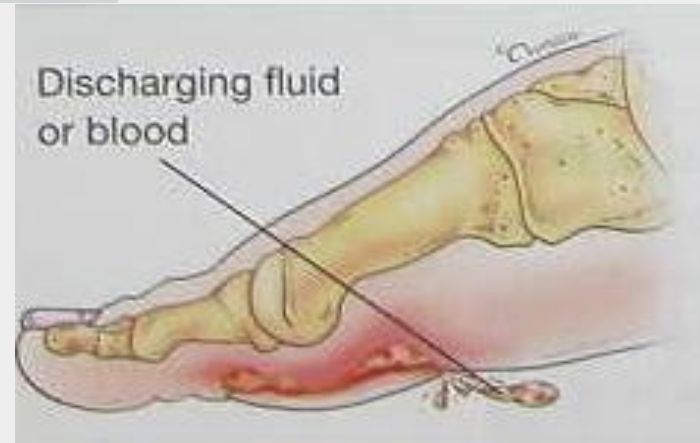
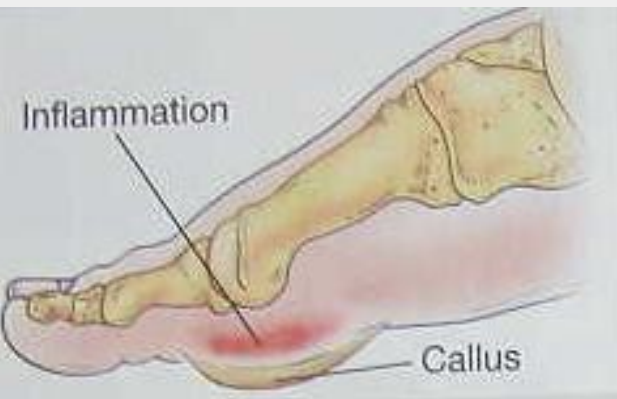


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Basic structural foot assessment

- Inverted/ everted foot
- Digital deformity
- Pressure areas- callus / corns / blisters





Basic structural foot assessment



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Basic Wound Care

- Assessment
- Debridement
- Dressings
- Off-loading
- Multi-disciplinary care teams



Wound Assessment

- Size, depth, location
- Infection?
- Neurological assessment
- Vascular status
 - further investigations
 - Debridement
- Causative factors



Wound debridement

- Removal of non-viable tissue via sharp debridement in non-ischaemic foot
- Autolytic debridement using topical hydrogels



Wound dressings

- Generally poor quality studies available
- Main considerations
 - moisture balance,
 - frequency of change,
 - size/location/pressure off-loading



Anti-microbial dressings

- No clinical trials available comparing to conventional therapy
- Cost Vs benefit??
- Consider use in
 - recalcitrant wounds,
 - critically colonized wounds,
 - ischaemic wounds?



Multi-disciplinary wound teams

The following factors should always precipitate referral to multi-disciplinary care team

- Deep ulcers (tendon, joint, bone)
- Ulcers not reducing in size after 4 weeks of appropriate treatment
- Absence of foot pulses
- Ascending cellulitis



Podiatry- what can we offer?

Lower limb assessment

Wound care experience

Wound off-loading

Gait assessment, assistance with orthotic prescription



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