

# A prospective study of 493 Ankle Fractures in a UK Trauma unit: What lessons can be learnt?

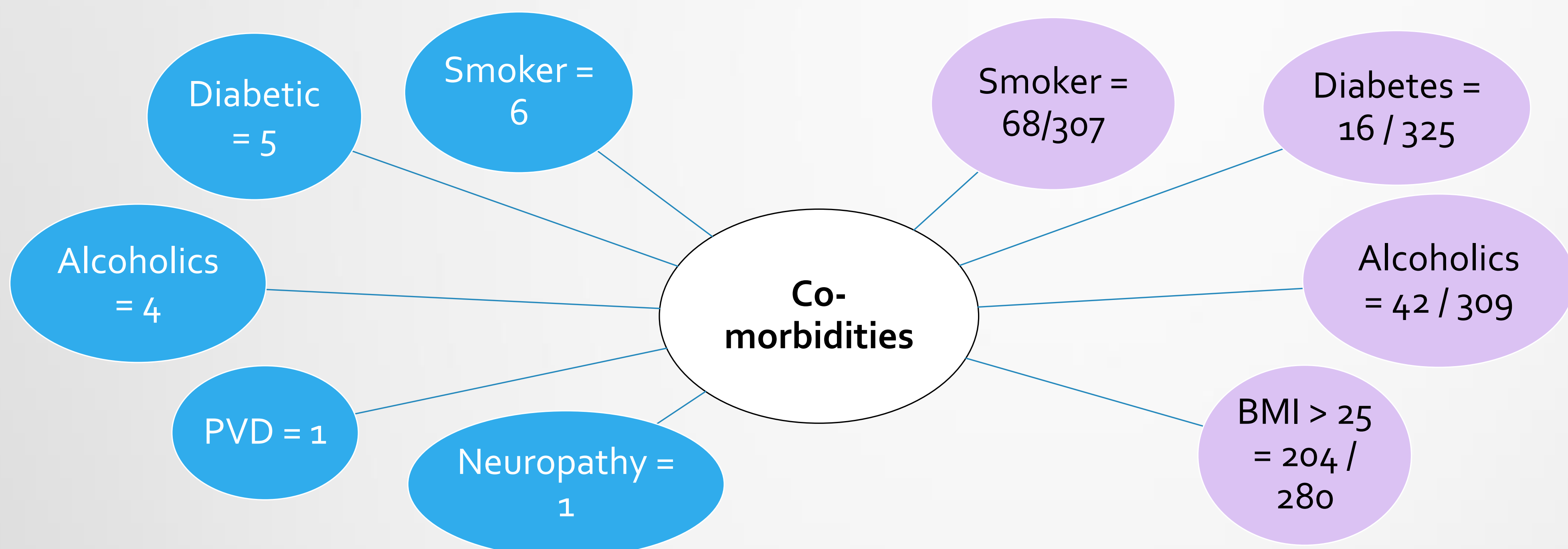
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Introduction	Methods	Results & Conclusion
<ul style="list-style-type: none"> <li>The incidence of ankle fractures is 104 per 100,000 per year in the UK. This represent 10% of the fracture workload – expected to increase x3.</li> <li>Ankle fractures impact patients' physical functional outcomes and quality of life.</li> <li>We present our experience and lessons learnt in the management of ankle fractures in a large UK Trauma unit.</li> </ul>	<ul style="list-style-type: none"> <li>Prospective data collected between 2013 and 2017</li> <li>A total of 493 patients entered into the database</li> <li>Group A: Stable ankle fractures "stable ankle pathway"</li> <li>Group B: Unstable ankle fractures treated with surgical fixation</li> <li>Group B radiological assessment by Petronne's criteria</li> <li>PROMS: Olerud-Molander Ankle Scores (OMAS), Lower Extremity Functional Scales (LEFS).</li> </ul>	<ul style="list-style-type: none"> <li>Our 'stable ankle pathway' is safe and effective with low complications.</li> <li>At a minimum follow-up of one year, mean decline in functional scores post fixation: OMAS = 14.6, LEFS = 11.2</li> <li>Patients counselling for general decline in ankle function due to the injury regardless of adequate fixation.</li> <li>Simple educational tool can be used to improve trainees and trauma surgeon's awareness in treating this injury better.</li> <li>No significant co-relation between patient demographics, co-morbidities, radiological and functional outcome</li> </ul>

## Group A: Stable Fracture (n = 142)

## Group B: Surgical Fixation (n = 351)



**Stable ankle fracture?**

**Yes:**

- Lateral malleolus only
- Weber B fracture
- Undisplaced

**Nurse led 'Stable ankle pathway'**

Complete cast at 48 hours (change cast if foot is in equinus). Allow patient to weight bear as able\*

Repeat x-ray at 1 week (nurse led clinic)

**Undisplaced (stability confirmed)**

- Full cast or aircast boot for 4 weeks\* (patient / clinician choice)
- Fully weight bear\*
- No further x-rays required

**No:**

- Medial malleolus fracture
- Weber C fracture
- Displaced (talar shift)

**Recall to assess & discuss surgery with consultant A**

**Discuss with consultant A. Options:**

- Gravity stress view
- Moulded cast + check x-ray + NWB
- Surgical fixation

**?Displaced / Unstable?**

\*Diabetic with peripheral neuropathy should be Non-Weight Bearing and should be immobilised in a cast for twice as long

Outcome	n =
Internal fixation	1
Moulded Total Contact Cast	1
Delayed Union	2
Lower limb DVT	4
Re-fracture	1
Complex Regional Pain Syndrome	1

### ANKLE ORIF - Get it right!

25% of ankle fracture are fixed malreduced

**TOP TIPS - 3 things to look for:**

- O SIGN of fibular length**  
a perfect circle can be formed between the lateral process of the talus and the tip of the fibula
- SYNDESMOSIS restored**  
Tibiofibular clear space <5mm on mortise view
- MEDIAL CLEAR SPACE**  
joint space symmetrical throughout and <4mm

Malleolus involved	n =
Uni	122
Bi	116
Tri	91

Weber	n =
A	8
B	213
C	79
Medial mal	22
Post mal	5
Medial + post mal	2

Adequacy of reduction	Before Education (n=257)	After Education (n=72)
Anatomic	180 (70%)	56 (77.8%)
<2mm	57 (22.2%)	12 (16.7%)
>2mm, non-congruent syndesmosis	20 (7.8%)	4 (5.5%)

Pre- and Post-op OMAS score decline (total 67)	<b>14.6 (0-100)</b>
Pre- and Post-op LEFS Score decline (total 66)	<b>11.2 (0-80)</b>

#### References

- Curtis EM, van der Velde R, Moon RJ, et al. Epidemiology of Fractures in the United Kingdom 1988-2012: Variation with age, sex, geography, ethnicity and socioeconomic status. Bone. 2016;87:19-26. doi:10.1016/j.bone.2016.03.006.
- Petronne FA, Gail M, Pee D, Fitzpatrick T, Van Herpe LB. Quantitative criteria for prediction of the results after displaced fracture of the ankle. J Bone Joint Surg Am. 1983 Jun;65(5):667-77.