

## **Burns, Skin Grafting, Physiotherapy:**

**Tool & Skills Project: Malawi.Kom**

**Effective teaching techniques: R Markus, AMECA**

### **Saturday 2<sup>nd</sup> April: Mangochi District Hospital:**

Mangochi District Hospital is a large district hospital located in the center of Mangochi, which is a vibrant interesting little town. There is a high population of Muslim residents who are fishermen and farmers. The local community is relatively used to tourists; town has several simple lodges and good access to banks + internet.

The hospital has a catchment area of 980,000 people for the district and liaises with 47 outreach health centers.

The requirement for skills training in burns and skin grafts in all district hospitals is palpable; there is a high percentage of burns patients in all hospitals in Malawi; this is due mainly to traditional cooking on open charcoal fires. There is a high representation of burns patients with epilepsy, who simply fall into open fires, or are scalded by cooking pots. Additionally, serious road traffic accidents also often require skin graft treatment as a result of injuries and district hospitals also see a high percentage of crocodile bites, often requiring grafts.

Burns and other accidental injuries present a difficult challenge for rural district hospitals due to the lack of effective skills training for healthcare professionals. Skin-grafting is often required, without which, healing of skin defects often becomes complicated by infection, bad scar formation and contractures. Burns patients unnecessarily frequently end up with atrophic, weak muscles, stiff joints and contractures are common place.

Although wounds are usually successfully treated, patients routinely suffer permanent limb damage due to contractures. This can be easily prevented by physiotherapy from the start. During ward rounds, we observed many patients whose limbs are now permanently immobile without further surgery, due to the fact that they had not received effective physiotherapy during recovery. If movements are temporarily difficult or too painful, deformity can be prevented, by splinting or traction of the limbs. (Anti- flex and anti-adduction).

### **Course Attendees:**

Qualified and student Clinical Officers, nurses and other healthcare professionals.

### **Course Content:**

Depending on the availability of a suitable room at the hospital, the format for the session consisted of a lecture to the attendees using the Power Point presentation, followed by breakout group practical sessions. The size of groups will depend on the number of attendees, the number of available members of the teaching team and also the number of Sober knives and meshers available. Ideally, at least 2 groups are

useful, to demonstrate both use of the mesher and use of the Sober knife. Timing can be adjusted to suit available time of hospital staff, but a minimum of 2 hours is recommended.

- Effective teaching techniques. (AMECA)
- Identification of severity of burns; Rule of 9.
- Depth of burn: Full thickness, superficial etc.
- Primary survey, wound care, analgesia, contracture release
- Use of Sober Dermatome; knife in Split Skin Grafting
- Post graft dressing.
- Q & A session

### **Sober Dermatome:**

Developed in The Netherlands, this is basically a simple handheld skin-graft knife for harvesting split-skin grafts, making this treatment much easier for anyone to use. It was modelled after the Schick razor; widely available and uses lost cost disposal blades. <https://www.youtube.com/watch?v=j-axW8DCsug>

### **Equipment:**

4 or 5 Sober knives

Blades

Mesher

Cucumbers for demo

Thin rubber material for mesher demo. (Any thin material to demonstrate)

Laminated cards with burns info, (thickness, wound cleansing etc)

Notebooks and pens for students

Projector + laptop + Power Point presentation.

Laminated

The course was delivered at district and mission hospitals throughout southern Malawi; each hospital was presented with a mesher and a sober knife + spare blades. The hospitals were also given a copy of the presentation for future teaching sessions.

### **Appendices:**

- 1 Information for Laminated cards on Primary Assessment + Treatment
- 2 Power Point Presentation: (Link to presentation on website)

### **Acknowledgments:**

We wish to thank Dr Jan Petit of Malawi.Kom and colleagues for allowing use of their Power Point and teaching materials and for the loan of equipment to AMECA/LAST for future teaching sessions in Malawi.

<http://www.malawikom.org/en/index.html>

R Markus April 2016

Appendix 1:

# PRIMARY ASSESSMENT

*Assessments*

*Interventions*

**A = AIRWAY WITH SIMULTANEOUS CERVICAL SPINE STABILIZATION**

*While maintaining spinal stabilization*

Speech  
Breathing normally?  
Foreign objects  
Swelling / edema  
intubation  
Secretions

Cervical spine stabilization  
Jaw thrust /chin lift  
Remove foreign objects  
Guedel tube/endotracheal  
Suction

**B = BREATHING**

Spontaneous breathing  
Chest movement  
Respiratory rate  
Chest wall integrity  
Use of accessory respiratory muscles  
Bilateral breath sounds  
Jugular veins & trachea position

Supplemental Oxygen  
Bag-mask-valve ventilation  
Needle thoracocentesis  
Chest tube

**C = CIRCULATION & BLEEDING**

site  
Pulse? Where palpable? Rate?  
Heartsounds?  
Shock symptoms  
BP  
Xmatch  
External bleeding : arterial/venous  
Internal bleeding?

Direct pressure over bleeding  
IV drip: 2 large bore needles with rapid infusion of NS or Ringers  
Blood sample for g/ping and  
Cardio pulmonary resuscitation  
Blood administration

**D = "DISABILITY" (NEUROLOGICAL STATUS)**

Level of consciousness (A-V-P-U)  
Pupils

Guedel tube

**E = Exposure and Environmental Control**

Remove clothing  
Full body inspection  
Blankets to avoid heat loss

# SEVERE BURNS

children > 10%, adults > 15% TBSA (Burnt Surface)

## ▶ **IV Fluid resuscitation**

- 🕒 note **time** of injury
- take **weight** children < 12yrs:  
 $2x (\text{age in years} + 4) = \dots \text{kg}$
- use Ringer's lactate
- CHILDREN  $3\text{cc} \times \text{kg} \times \text{TBSA}\% + \text{maintenance}$   
( $2x\text{kg} + 10\text{cc} / \text{hr}$ ) per 24 hrs.  
Half in first 8 hours, rest in next 16 hrs
- ADULTS  $4\text{cc} \times \text{kg} \times \text{TBSA}\%$  per 24 hrs.  
Half in first 8 hours, rest in next 16 hrs
- measure **urine output**.  
Children minimum 1 cc/kg/hr, adults 30 cc/hr

▶ **Give analgesics:** pethidine 1 mg/kg/dose or morphine 0.1 mg/kg/4 hourly

▶ **Consider immediate surgery:**

1. escharotomy
2. excision+skin grafting

▶ **Start early feeding**

▶ **Prevent contractures**