HOW WE MANAGE TRAUMATIC HEAD INJURIES IN LOW RESOURCE SETTINGS – RURAL KENYA, (EAST AFRICA)

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DEFINITION OF TRAUMATIC HEAD/ BRAIN INJURY (THBI)

• Any severe trauma to the head in which the patient sustains any degree of loss of consciousness
• The major cause is shown on the right...
INCIDENCE

• By far, the commonest causes are motor-cycle (“Boda-boda”) related Road Traffic Accidents
• Followed by assault with blunt objects
• Thirdly, falls from heights (especially in construction workers/ children).
MANAGEMENT 1

• Specific “high dependency units” wards have been set aside for these patients in most Rural (County) Hospitals

• On admission, a Plain two view (AP/ Lateral) Skull X-ray is performed at OPD. (Cervical spine X-rays are not routinely performed for cost reasons)

• Initial stabilization consists of: Oxygen via simple face mask, institution of an Intravenous line and administration of Normal Saline, Tetanus Toxoid injection, management of other associated injuries appropriately.

• Urethral catheterization and passage of a nasal / oral -gastric feeding tube

• The available nurse will check on the patient’s Pulse rate, Blood Pressure, Respiratory rate and Pattern and Pupillary response/size, once in a while and whenever summoned by the relative
The resident junior medical doctors are trained to diagnose **depressed skull fractures** from these films alone.

They are also able to conduct surgical toilet and elevation of the same under GA with Halothane anaesthesia with Endo-Tracheal Tube plus/minus NMB.

At Craniotomy, the surgeon will make an on-the-table decision as to whether to open the Dura or not, depending on its colour and the pressure from underlying structures, as can be felt with his palpating finger. A dark colour often signifies collected blood (Sub-Dural Haematoma), while increased pressure signifies a raised Intra-Cranial Pressure.

The anaesthesiologists are almost always trained “Clinical Officers” or Nurses, the equivalent of Certified Registered Nurse Anaesthetists in the USA/UK (CRNA).
• If facilities allow, the patient is nursed in the same hospital post operatively. The patients’ next-of-kin are allowed free access at the bed-side throughout the patient’s stay in the ward, as long as it does not interfere with nursing procedures.

• Broad spectrum antibiotics, (Crystalline Penicillin plus/ minus Gentamycin) are given prophylactically.

• For analgesia, the patients receive either I.V. Tramadol or Paracetamol tablets, which are crushed and passed through the feeding tube with tap water.

• Next-of-kin are encouraged to bring food from home which is then blended into a soft liquid paste and is fed to the patient through the feeding tube.
Decision to transfer/ Morbidity

• If the anaesthetist is dissatisfied about the patient’s post-operative condition, attempts are made to transfer the patient to a higher level hospital for further management.

• Transfer is always by road “ambulance” and with an accompanying clinician and relative as the ‘monitor’.

• Morbidity and mortality are very high, given the circumstances under which many clinicians work and the severity of the injuries encountered.

• There are no local or regional traumatic head injury rehabilitation centers.
Mortalities

- Most deaths are as a result of adult passengers on motor bikes who were riding without wearing safety helmets
- Many deaths are from assaults with wooden clubs during armed robberies
- A few deaths from falls from heights above 10 feet (children) and 20 feet (adults).
SUMMARY

• Most THBI in rural Africa occurs in the younger population age groups
• It is preventable, since most are caused by willful carelessness
• Management is primarily based on clinical parameters rather than radiological parameters
• There is no frame work for rehabilitation of such patients.
• There are high morbidity and mortality rates associated with this condition (NB: Cervical Spine X-rays are usually not done)
• The impact of THBI on the country’s economy has not yet been evaluated