Trauma, a new cause of death, disability and economic loss in Juba

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Introduction

Five years ago we were seeing an increasing number of trauma cases in Juba Teaching Hospital and the situation is even worse today in 2011. The objectives of this study were to:

- determine the magnitude and type of trauma injury as seen in Juba
- examine its causes
- explore possible solutions

Patients and methods

A prospective hospital-based study of all trauma patients was carried out for a period of eight months between January and August 2006. We excluded those brought in dead. Data used included admission and continuation notes.

Results

We saw 652 patients with different patterns of injury. Of these 58% (378) were males and 42% (274) were females. 12% (78) of the patients died, mostly as the result of severe head injury. The average hospital stay was 6 weeks.

Figure 1 shows that road traffic accidents (RTA) were the commonest cause of injury (391 cases) followed by gun shot injuries (157 cases). Domestic violence was the cause in 65 cases while other causes, such as falls from trees and accidental falls of elderly people, collectively accounted for 39 cases.

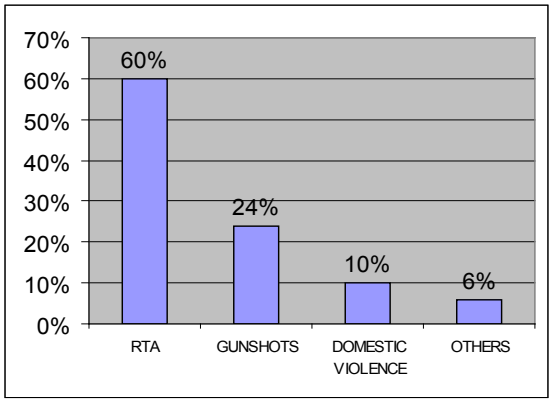

Figure 1. Causes of trauma among survey subjects.

Figure 2. X-ray of right forearm showing comminuted fracture due to gunshot (open fracture).

The causes of the RTA were:

- dangerous driving for 90% (352) of cases.
- drunkenness, bad roads and other factors for the remaining 10% (39 cases).

Figure 4 shows that of these 391 RTA patients:

- 60% (235) had long bones fractures (tibia, fibula, femur, humerus, forearm bones)
- 12% (47) suffered head injury
- 6% (23) had multiple ribs fracture
- 2% (8) had a spinal fracture
- 8% (31) had a pelvic fracture
- 12% (47) had a fracture of the short bones of hands and feet (see Figure 5.)

A later study in Juba of trauma caused only by motorcycle accidents found that injuries to the head accounted for about a fifth, and those to the lower limb about two thirds, of all injuries among drivers (1).

Discussion

Hope returned to the people of South Sudan when the peace agreement was signed in January 2005. The hope was that the end of the war meant no more lost lives and that people could prepare for new challenges. As is clear from this study, one of these challenges is that trauma is now a cause of much death, disability and economic loss.

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This problem, though not expected by many, is the natural result of an increasing population, increasing number of cars and entire change in the life style of people in Juba. So that still today there are many more young men who are bedridden in surgical wards than at any time before the peace.

Road traffic accidents

The leading cause of trauma in this study was road traffic accidents caused mainly by reckless driving – and the situation is even worse today. Roads in Juba have been rehabilitated but this has not reduced the number of RTA due to other factors. One reason is that there many more cars and motor and push bikes, and drivers and cyclists still need to dodge deep potholes in the roads.

Last October the government held a Road Safety Awareness Week. We hope that stakeholders will implement and reinforce these safety awareness measures and so speed up the process of making the public aware of RTA challenges (2).

Other causes

The second most frequent cause of trauma was gunshots injuries - a reflection of the postwar widespread possession of guns and the need for conflict resolution campaigns by government and NGOs. Building trust among tribes will reduce intertribal conflicts. Civilians who feel their security is guaranteed are more likely to surrender their guns to the police and army - thus reducing the possibility of guns being used in any village conflict.

Urban life is hard for the internally displaced people in South Sudan as the majority is used to simple village life. Frustration and hopelessness arising from dislocation has increased domestic violence, which is almost unknown in rural life. So, providing the basic services of education, health and food security by the government and a commitment to improve the socioeconomic status of people is likely to reduce crime and domestic violence.

Treating trauma

The high burden of trauma injury is still taxing the resources of Juba Teaching Hospital so heavily that the capacity of the hospital to care for non-trauma patients has been reduced. Four of the six surgical wards are now filled by trauma victims. At the moment patients with long bone fractures are treated with skeletal traction and require a hospital stay of about 6 weeks as there are no facilities for open reduction and internal fixation.

Figure 3. Open fracture of the distal end of the left femur due to gunshot

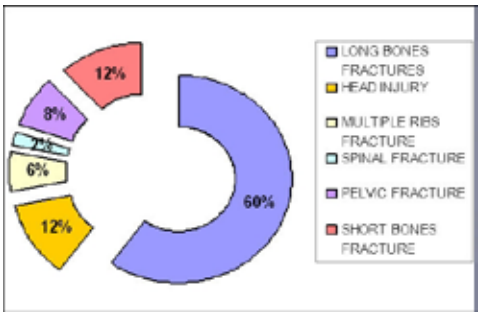

Figure 4. Nature of injuries caused by RTA.

Conclusion and recommendations

Trauma is a major medical problem in Juba and we need to urgently address its causes and management.

Causes of trauma

We recommend that:

- Awareness campaigns for road safety measures, like the one in 2010, should be followed up by the Ministries of Health in Central Equatoria State and Government of South Sudan in collaboration with the traffic police.
- Speed limits should be set for driving in the town and those exceeding the limits should be severely punished.
- The laws regarding the use of safety belts in cars, helmets on motorbikes and driving under the influence of alcohol should be enforced (3,4).
- All the roads within Juba should continue to be rehabilitated by the Ministry of Transport and Roads.
- Possession of firearms by civilians should be discouraged to prevent their use in village conflicts and crime.

Managing trauma

- The trauma management capacity of Juba Teaching Hospital needs strengthening.
- A trauma centre should be established in Juba as a referral point for all trauma patients who need special care.

Figure 5. Compound fracture of the right wrist joint following RTA. See exposed carpal bones.

- There are no rehabilitation services for those who survive trauma with serious physical and/or cognitive disabilities. We recommend the development of a multidisciplinary team of physiotherapists, occupational therapists and clinical psychologists as part of the overall management of trauma.

References

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Further reading

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CASE STUDY - Intracranial Haemorrahage

Clinical History

Hospital admission after sudden onset of severe headache, photophobia and neck stiffness with subsequent fall and loss of consciousness.

Figure 1. CT scan without iv-contrast obtained at admission about 1 hour post onset of symptoms.

1. *Ruptured giant aneurysm of the right sided middle cerebral artery*
2. *Third ventricle showing signs of compression and left sided midline shift*
3. *Intraventricular haemorrhage involving the dilated posterior horn of left lateral ventricle*
4. *Intraparenchymal haemorrhage within the right temporal lobe and basal ganglia*
5. *Right temporal acute subdural haematoma*
6. *Intraventricular haemorrhage involving the posterior horn of right lateral ventricle*
7. *Subarachnoid blood collection within the posterior interhemispheric fissure*

Radiological Report

There is evidence of a a large right temporal intraparenchymal haemorrhage showing extent into right sided basal ganglia as well as frontoparietal white matter. The haemorrhage appears to originate from a large ruptured aneurysm of the right sided middle cerebral artery. Further blood collections are seen within the posterior horns of both lateral ventricles as well as fourth ventricle. A subtle subarachnoid blood collection is seen within the posterior interhemispheric fissure. There is also evidence of an extensive perifocal oedema resulting subsequently in a left sided midline shift or cerebral transfalcial herniation. The right lateral and third ventricle are markedly displaced and compressed resulting in a secondary obstruction of the left sided foramen of Monroi subsequently leading to an internal hydrocephalus of the left lateral ventricle. Haemorrhage, perifocal oedema and internal hydrocephalus are resulting in an overall increase of intracranial pressure with subsequent cerebral transtentoriell herniation and brain stem compression.

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