Kabul

Kabul is the capital and largest city of Afghanistan, located in the eastern section of the country. It is also a municipality, forming part of the greater Kabul Province. According to estimates in 2015, the population of Kabul is 4.635 million, which includes all the major ethnic groups.

The NATO KAIA Hospital (Kabul International Airport), under French command, provided medical support for NATO forces in the Kabul region from 2009 to 2014. Medical assistance to civilians was an additional mission which included support for children who were war injured. The objective of this study was to analyze characteristics of cephalic injuries in children victims of war trauma.

A retrospective study was conducted and commenced with the hospital opening (July 2009) to March 2012 on all children (<15years) with war trauma. We distinguished cephalic lesions in cranial (neuro-surgical), ophthalmological and neck regions. We analyzed mechanism, region, severity score, surgeries and resuscitation efforts.

217 children were operated on with 81 war traumas (mean age 10.2years). 36 children (44.4%) had a cephalic injury. 52.9% of the injured had an ophthalmological injury, 38.2% a cranial region injury and 29.4% a neck lesion. Mortality rate was 5.6% (1 hemorrhagic shock and 1 cerebral wound) in this cephalic lesion group. Ophthalmic injuries were the most common of cephalic injuries; 19 children of which 7 had a bilateral injury (26 eyes). In this group, fragmentary injuries were the most frequent (64% of eyes). In cerebral lesion group, the lesions were linked to a bullet or a shrapnel in 9 of 13 children. This mechanism systematically caused a crania-cerebral wound. Explosion (fragmentary and shrapnel) was the most important in the neck lesions (7 children of 10).

The cephalic lesions were the second most common region in children during our experience in Afghanistan. Lack of protection (helmet) in children may explain the frequency of cephalic wounds. [1)].

Dagain et al., analyzed 48 records. Mean age was 21.9 years (1-46 years) with a 37:11 (male:female) sex ratio and a majority Afghan population (n = 41). Civilians represented 64.6% (n = 31) of casualties. On the battlefield, mean Glasgow Coma Scale score was 9.4 [3-15]. On arrival at the KaIA field hospital, 20 of the 48 patients were hemodynamically unstable. All patients underwent a full-body computed tomography scan. The majority of our casualties had associated injuries. Neurosurgery was indicated for 42 (87.5%) patients. The surgery consisted of wound debridement plane by plane associated with decompressive craniectomy (n = 11), debridement craniectomy (n = 19), and craniotomy (n = 12). A total of 32.4% wounded died at the point of injury, 8.4% at the emergency department, and 16.9% after surgery.

War casualties with ballistic head injuries were predominantly multitraumatized patients with hemodynamic compromise requiring neurosurgical damage control management and multidisciplinary care. The neurosurgeon has thus an essential role to play [2)].

A descriptive analysis was conducted of 77 penetrating traumatic brain injuries

On 77 patients, 23 died during the prehospital phase and were not included in the study. Severe traumatic brain injury represented 50% of patients. Explosions were the most common injury

mechanism. Extracranial injuries were present in 72% of patients. Traumatic brain injury coagulopathy was diagnosed in 67% of patients at role 3 admission. Red blood cell units (RBCu) were transfused in 39 (72%) patients, French lyophilized plasma (FLYP) in 41 (76%), and fresh whole blood (FWB) in 17 (31%).

The results of this study support previous observations of coagulopathy as a frequent complication of traumatic brain injury. The majority of patients with war related penetrating traumatic brain injury presented with extracranial lesions. Most of them required a high level of transfusion capacity. [3].

Three hundred and seventy-three interventions performed by the neurosurgeon deployed were reported for 373 surgeries, in 335 patients, representing 10.6 % of the overall surgical activity of the centre. Among the 69 interventions performed on soldiers, 57 surgeries were undertaken in emergency (82.6 %), while 12 were elective procedures (17.4 %). On the other hand, 289 surgeries were performed in civilian Afghans, with 126 emergency procedures in (43.6 %), against 163 elective interventions (56.4 %). Among the 44.5 % (n = 149) of the traumatic casualties, cerebral lesions represented 28.7 % (n = 96) and spinal lesions 12.4 % (n = 42). Ninety patients had multiple injuries. Additionally, patients without trauma accounted for 55.5 % (n = 186) of the overall population. Thus, 49 % (n = 164) were operated on for non-traumatic lesion of the spine. These were mostly civilian Afghans treated under medical aid to the population (90.2 %, n = 148/164).

The military neurosurgeon had two roles in KaIA: both to support the armed forces and to manage medical aid to the civilian population. This study gives food for thought on the neurosurgical needs in modern warfare, and on the skills required for the military neurosurgeon. [4].

1)
El Chehab H, Agard E, Dot C. Cephalic region war injuries in children: Experience in French NATO hospital in Kabul Afghanistan. Injury. 2018 Sep;49(9):1703-1705. doi: 10.1016/j.injury.2018.06.013. Epub 2018 Jun 9. PubMed PMID: 29908849.
2)
Dagain A, Aoun O, Bordes J, Roqueplo C, Joubert C, Esnault P, Sellier A, Delmas JM, Desse N, Fouet M, Pernot P, Dulou R. Management of War-Related Ballistic Craniocerebral Injuries in a French Role 3 Hospital During the Afghan Campaign. World Neurosurg. 2017 Jun;102:6-12. doi: 10.1016/j.wneu.2017.02.097. Epub 2017 Feb 27. PubMed PMID: 28254598.
3)
Bordes J, Joubert C, Esnault P, Montcriol A, Nguyen C, Meaudre E, Dulou R, Dagain A. Coagulopathy and transfusion requirements in war related penetrating traumatic brain injury. A single centre study in a French role 3 medical treatment facility in Afghanistan. Injury. 2017 May;48(5):1047-1053. doi: 10.1016/j.injury.2016.11.023. Epub 2016 Nov 21. PubMed PMID: 27938877.
4)
Joubert C, Dulou R, Delmas JM, Desse N, Fouet M, Dagain A. Military neurosurgery in operation: experience in the French role-3 medical treatment facility of Kabul. Acta Neurochir (Wien). 2016 Aug;158(8):1453-63. doi: 10.1007/s00701-016-2843-z. Epub 2016 Jun 10. PubMed PMID: 27287215.