Need of Appropriate Referral System For Acutely Injured Children: Experience From The Largest City of Pakistan – A Case Report

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ABSTRACT

A 4-year old child was hit by a cow and sustained serious multisystem injuries. He reached a dedicated trauma center within 30-minutes. However, he was referred to another tertiary care center and finally to a pediatric institute for definitive management. It took six hours for the child to get an admission to surgical ICU of paediatric hospital. This case highlighted a need of proper treatment facility of acutely injured children as well as an appropriate referral system in case transfer to a higher center is deemed necessary after the initial management in the emergency room.

Key words *Pediatric trauma, Domestic animal injury, Trauma referral system, Level 1 trauma center.*

INTRODUCTION:

There are a number issues faced by the parents of the injured children during the referral to the tertiary care hospital for treatment. Timely and safe transfer of a trauma victim is as essential as providing lifesaving treatment itself. Following case highlighted the shortcomings in our healthcare system that needs urgent attention. An integrated referral system for trauma patients save precious lives and decrease associated morbidity.[1]

CASE REPORT:

A 4-years old child sustained significant injuries after being hit by a cow. He was received in our ER after visiting different hospitals including a designated trauma center in the city as well as a tertiary care hospital. The reason of referral was the non-availability of pediatric surgical services.

The ordeal of the child and family started from the time of injury. Patients was immediately taken to a nearby clinic after the accident. However, they were advised to take the child to the trauma center without any facilitation. The family themselves arranged the ambulance and reached the trauma center within half an hour of the incident. Child had an initial triage, with maintenance of intravenous line and fluid resuscitation. Child also received a shot of tetanus toxoid and pain relief medicines. X-ray chest was done which showed right sided 5th to 8th rib fracture. The E-FAST was also done which was reported as unremarkable. The child was then referred to other tertiary care facility from the designated trauma center due to non-availability of pediatric surgical team. Patient arrived in other tertiary care hospital without having prior information. By that time five hours were already passed. In second hospital E-FAST was repeated that showed presence of fluid in right pleural cavity, with mild free fluid in the pelvis. The patient remained hemodynamically stable during this period. From the second hospital the child was

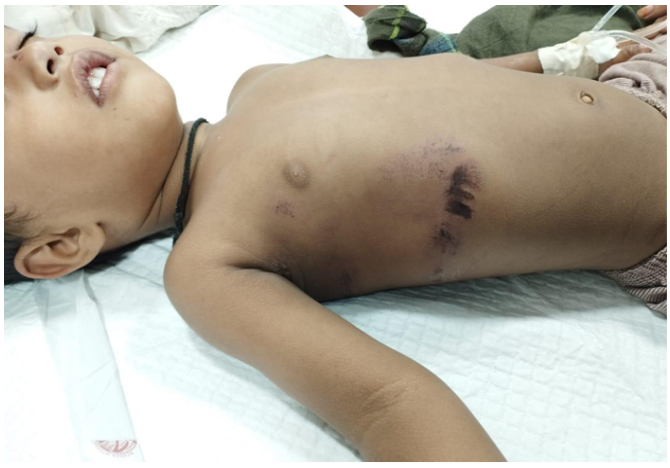

Fig I : The bruises over chest wall following hit by a cow.

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referred out again without prior information with the note that pediatric surgical services were not available. Finally, child arrived in the ER of our hospital, six hours after the injury.

Patient was received by the surgical team. The child had a respiratory rate of 38 breaths per minute, heart rate of 110 beats per minute with oxygen saturation 98% on supplemental oxygen provided by a facemask. He was interactive, fully conscious and complaint of severe chest pain on right side along with upper abdominal pain with bruises over same anatomical regions (Figure I). Child was kept NPO, IV warm crystalloid fluids were continued, and pain was addressed with nonsteroidal anti-inflammatory medicines. The child was admitted to surgical ICU for observation as his vital signs were stable. The parents were counselled about the injuries, need of further investigations and monitoring and possibility of surgical intervention if condition deteriorates. During admission CT scan chest, abdomen and pelvis with IV contrast was done. It showed segment 8, grade 1 liver injury, grade 1 anterior pole spleen injury, small quantity of fluid in the pelvis, right lung upper and middle lobe contusions, with mild pleural fluid and pneumothorax. Right sided 5th to 8th ribs fractures were also noted on bone window. Child was managed non operatively to which he responded well. He was discharged to home on 4th day after admission with advise for the follow up. At revisit he was found in stable condition.

DISCUSSION:

This case highlights the plight of the children who need urgent surgical consultation and treatment in the largest city of Pakistan. According to the Country Office UNICEF annual report 2020 on Pakistan, the children constitute 45% of its population and 22.7% are adolescents between 10 -19 years of age.[2] This is a huge number, however, treatment facilities for pediatric trauma patients are limited. In Karachi the provincial government has constructed a dedicated multi-storied trauma center. However, the child who was referred to same facility after trauma could not get comprehensively care. He had initial triage, treatment and relevant investigations but due to lack of pediatric surgical services was referred out. However due to lack of integrated referral protocol child landed in a tertiary care facility that had no pediatric surgical facility.

The key points learned from this case report include prevention of injuries from domestic animal for which parents needs to be educated.[3] Children while playing with them get hit if animal is incited and safe distance is not maintained. This was reported in our patient. By knowing the pattern of trauma in a geographical location, appropriate strategy can be adopted for its prevention. A proper trauma registry is essential where all injuries are documented.[4]

Prehospital trauma care and safe transfer of the patients require training of prehospital emergency providers including ambulance staff. In Pakistan rescue 1122 emergency ambulance services are now available in all the provinces. There is a need of integration of prehospital emergency services with trauma centers, that should have level 1 facilities. In case of referral standard protocols must be observed.[5] All such measures can go a long way to prevent mortality and minimize morbidity.

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