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Case Report: A 6-year-old boy with extensive crush injury of the lower extremities

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A 6-year-old boy presented to the Accident & Emergency Department of Komfo Anokye Teaching Hospital (KATH) Kumasi, Ghana with hemorrhagic shock and severe crush injury of both lower extremities following a roll-over accident by a motor vehicle while crossing a highway. Initial therapy included aggressive resuscitation with IV fluids and hemotransfusion. He was quickly brought to the OR for assessment of injury extent: 1.) Severe crush injury of both lower limbs with gross soft tissue injuries beyond limb salvage. 2) Huge degloving injury extending from the lower half of the back to the perineum, sparing skin of scrotum and penis. Disarticulation at the left hip joint level of the left lower limb and a trans-femur amputation of the right lower limb were performed as well as a debridement of the degloving injury of the back. The patient was treated in the Clinical Decision Unit for 16 days due to unavailable vacancy in the pediatric ICU (PICU). During this time, he developed sepsis, wound infections, and an infection of the anal region, for which surgical re-debridement and colostomy were done together with pediatric surgeons. He was then transferred to the PICU for acute wound care, management of colostomy, control of E. coli sepsis and anemia. Nine weeks after his initial presentation, split-thickness skin grafting (STSG) using skin from his arms was performed in collaboration of trauma and plastics surgeons of KATH. First review of STSG post-surgery showed a good response and no signs of graft rejection or infection. 14 days later he showed 85% STSG take, all the donor sites of the skin graft including both arms and both fore arms showed healing without complications. A colostomy reversal was performed about four months after the initial procedure. Due to multiple wounds around the perineum and the anal region, he developed anal canal stenosis. Repetitive dilation treatments over the course of three weeks were performed with sufficient results. The patient started to mobilize using a mini wheel chair and was transferred to the pediatric surgical ward where he integrated well with other children. He remained in good spirits and was discharged 4 ½ months after the initial accident.

Long term graft survival will determine management success. The future therapy strategy will include rehabilitation to ensure mobility under the current circumstances and the provision of an adequate wheel chair, perhaps even a form of sustainable prosthesis.

The patient and his family will continue to face several socio-economic and cultural challenges (family burden, cost of medical equipment and medication, hospital bills, rehabilitation, social integration).

The survival of this child is the result of effective interdisciplinary teamwork. Furthermore, it demonstrates success and challenges of trauma care under the socio-economic conditions of a lower middle-income country.

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