

EDITORIAL

PAEDIATRIC UROLOGICAL EMERGENCIES IN LOW- AND MIDDLE-INCOME COUNTRIES: A CALL FOR COORDINATED ACTION

Urological emergencies are not common in children. They less frequently result to deaths but could lead to lifelong debility, reduction in quality of life and drop out from school and social stigmatization if complicated or mismanaged.^{1,2}

Trauma is the most common cause of urological emergencies in children occurring in 10-15% of cases of injured children brought to the emergency room.^{2,3} Genitourinary trauma in children could be either iatrogenic following surgical operations like circumcisions, pelvic and abdominal surgeries; or from road traffic crashes, fall from heights, assaults and sports injuries.^{4,5} The common non-traumatic causes are congenital genitourinary abnormalities requiring emergency interventions like salt-losing types of congenital adrenal hyperplasia (CAH), pelvi-ureteric junction obstructions, bladder outlet obstructions arising from posterior urethral valves, urethral atresia and Prune-belly syndromes. They may present at birth or in early infancy.¹ Some of these may escape recognition and early diagnosis by the attending physician with catastrophic consequences. Other conditions that could constitute paediatric surgical emergencies include urolithiasis, testicular torsion, paraphimosis and priapism particularly in children with sickle cell anaemia.¹

Iatrogenic injuries to the external genitalia are quite common during circumcisions by untrained personnel. Complications such as primary and reactionary haemorrhage, urethral injuries and glansular or penile amputations have been reported.⁴ In older children, road traffic crashes are quite a common cause and when the kidneys are affected, it is usually associated with multiple organ injuries.⁵ Ureteric injuries though uncommon could occur in penetrating abdominal injuries. Bladder injuries occur in lower abdominal and pelvic traumas while urethral injuries are often associated with pelvic injuries.²

Evaluation and treatment of paediatric urological emergencies require a skilled on-call physician to be able to recognize these conditions and should activate a multidisciplinary emergency system involving but not limited to the following specialties; Paediatric surgeon, Paediatric urologist, Paediatric Nephrologist, Neonatologist, Endocrinologists and Social welfare. These if present provide for expert care that would mitigate against complications and mortalities as much as possible. Sadly, sub-specialization is still primordial in most low- and middle-income countries.³

Presentations of these conditions differ according to their aetiology; renal injuries present with abdominal pains, haematuria and involvement of other organs, ureteric injuries which occur

during surgeries or following penetrating abdominal injuries could present with anuria if bilaterally ligated or extravasation and leakage following transaction; bladder and urethral injuries often occur with pelvic fractures and present with haematuria and blood at the tip of the penis respectively.² These injuries require high index of suspicion for early detection and interventions. Penile and scrotal injuries are often obvious and patients and caregivers will be quick to report these conditions.

The congenital causes of paediatric urological emergencies further require high index of suspicion and in-depth clinical evaluation. Babies with CAH may have over virilization (in females), diuresis, sudden collapse. It is often difficult to detect in males.³ Prenatal diagnosis of posterior urethral valve using ultrasonography has been invaluable in in-utero diagnosis and together with biochemical evaluations like lecithin sphingomyelin ratio, creatinine nadir of amniotic fluid or cord blood help to plan in-utero interventions. These services are not readily available in low- and middle-income countries and outcome has been poor.^{1,3}

Aside from ultrasonography, other imaging modalities to help diagnose and follow up children with urological conditions include contrast studies like voiding cysto-urethrography, intravenous urography, Computerized tomographic scans, magnetic resonance imaging and renal scintigraphies.² Most of these and the personnel manning them are not available in low and middle income countries leaving a lot to be desired in the management of these children.³

Treatment and follow up of children with genitourinary emergencies are individualized however early and possibly prenatal detection is of paramount essence.^{1,2,5} Mobilization of the requisite team for the management cannot be overemphasized as the initial care rather than the definitive treatment could to a large extent determine outcome. Initial errors in management could lead to organ losses such as in renal and ureteric injuries or long-term debility and death in conditions such as posterior urethral valves and CAH.

There is therefore a need for training of more skilled man powers in the area of paediatric urology and its allied specialties in the low- and middle-income countries. Regional or national children's hospitals and centres for paediatric urological excellence will create avenues for dedicated care and top-notch expertise in the care of these children while the huge volume would offer opportunities for improvement in skill sets for care of these children.

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