

Post-Circumcision Urethro-Cutaneous Fistula: The Key to Successful Reconstruction.

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Background: Routine circumcision of boys is a common practice in Tanzania. Because sometimes it is performed by persons with no surgical training, complications, including urethro-cutaneous fistula (UCF), are not uncommon.

Methods: Five boys whose ages ranged between 4 and 12 years with UCF were seen at four Dar es Salaam hospitals between 2002 and 2005. Personal particulars, the personnel doing the circumcision, description of the repair and follow up were recorded on a data sheet. Intravenous Augmentin was given at induction of anaesthesia for the fistula repair. A urethral catheter was inserted, and then a tourniquet was applied at the base of the penis. After incision and development of skin flaps the urethra was closed, a layer of dartos fascia interposed, followed by closure of the skin, all with 6/0 Vicryl. A compression dressing was applied, and the catheter was left in for 5-7 days.

Results: The boys ranged in age between 5 and 12 years, and had undergone circumcision at age 2 to 12 years. All patients were circumcised by paramedical personnel or a traditional practitioner. Urine leakage commenced 2 days to 2 weeks after circumcision. Four boys had coronal while one had a glandular UCF. No post repair complication was reported after follow up of 3 to 20 weeks.

Conclusion: Use of fine synthetic absorbable sutures and careful closure of the fistula with interposition of a pedicles dartos graft, are the main prerequisites for success. Attention to details of surgical technique can produce consistently good results in repair of UCF.

Introduction

More than half of Tanzania's 120 main tribes practice routine circumcision for boys, usually before they are into teen age. In most cases it is performed at a health facility, unlike in former times when it was performed ritually by a villager. A few are performed by trained surgeons, but the majority, especially in rural areas, are done by clinical officers or a nurses, who may have rudimentary or no formal training for it at all. As economic times become harder and social norms get eroded, more and more people claim expertise they do not really have.

The results of circumcision performed under such circumstances is serious complications, including wound infection, blood loss, haematoma formation, excessive skin removal, injury to the external urinary meatus, urethro-cutaneous fistula (UCF) and even partial amputation of the penis. In a 20-year Egyptian study of 64 boys with penile injury 67% of them arose from circumcision, and 93% of circumcision injuries were UCF¹. A post-circumcision UCF is extremely unlikely to occur if the operation is performed by an expert. However, in the socio-economic environment of countries like Tanzania, where the

basic education level is such that a parent, as a result mainly of ignorance, willingly brings out his son to a complete stranger passing in the neighbourhood calling out for anyone with a boy for circumcision, the result of which could be partial amputation of the child's penis. The main objective of this study was to initiate an improvement in the management of post-circumcision UCF. Profiles of five patients with UCF are presented, the technique of reconstruction is described, and the results of treatment highlighted. As urologists are few in the East African region, general surgeons should be educated in the proper technique of repair of UCF.

Patients and Methods

Data collected include personal particulars, category of person performing the circumcision, details of the Urethro-Cutaneous Fistula and its repair and follow up after treatment. All patients with post circumcision UCF attending any of the health facilities in Dar es Salaam where either of the two authors conducted clinics were eligible. Patients underwent clinical assessment, then were worked up and scheduled for surgery. Patients seen in the first few weeks after circumcision with a fresh fistula were advised to wait for a minimum of six weeks to allow the acute inflammation to subside before contemplating repair.

Before induction intravenous Augmentin (SmithKline Beecham, UK), 25mg/kg body weight was given as prophylaxis. Under general anaesthesia the perineal skin was prepared with Povidone Iodine, then the urethra was calibrated and a meatotomy performed if the external meatus was stenosed. The urethra was catheterized using a size 8 or 10F Foley's catheter or infant feeding tube if a suitable catheter was not available.

A stay suture was inserted at the tip of the glans penis to stabilize the penis during the procedure. The penis was compressed to empty it of blood, and then a tourniquet was applied at its base. In cases where a feeding tube was used, this suture was tied around the tube at the end of the operation to secure the tube in the postoperatively period. The fistula was assessed for position, size, shape, number and extent of scarring.

An elliptical skin incision was made, excising the rim of the fistula, raising skin flaps for a distance from the fistula commensurate with the required amount of dartos fascia. In a large fistula a broad-based skin flap was fashioned from the least scarred aspect of the fistula for closure in the final stage of repair.

The urethral defect was then closed with carefully placed interrupted 6/0 Vicryl (Ethicon, Edinburg, UK) sutures to make a water-tight closure and avoiding narrowing the urethra. Then a pedicled dartos fascia graft was mobilized and sutured with 6/0 Vicryl over the closed urethra, ensuring the suture lines were not superimposed. Where possible and appropriate a second layer of dartos fascia was deployed over the first. The tourniquet was briefly released to check for and control by suture any major bleeding. The skin was then sutured with 6/0 Vicryl, making sure the suture line was not superimposed over the dartos fascia suture line. Diathermy was not used in any of the patients. A tulle gras dressing was applied around the penis, followed by a layer of gauze and a compression dressing using a suitably sized strip of elastic bandage.

The wound was inspected on day 3 to ensure there was no haematoma or early signs of infection. On day 7 the dressing and the catheter were removed and the patient discharged home. In some cases the patient was allowed home on day 3 if social circumstances permitted it, and instructed to return for catheter removal, Patients were instructed to return for follow up a week after

discharge from hospital and then two weeks later. Subsequently they were instructed to return for follow up monthly for two months.

Results

Between June 2002 and June 2005, 8 patients with UCF were seen by the authors at four Dar es Salaam hospitals. Four patients were seen at Muhimbili National Hospital (MNH), 2 at Lugalo Military Hospital and one patient each at Aga Khan Hospital and Regency Medical Centre. By June 2005 five of them had already been operated on while three MNH patients were yet to be operated on, due to various logistical reasons.

The age at presentation varied between 5 and 12 years with a mean of 7 years. The age at the time of circumcision ranged from 2 to 12 years, with a mean age of 5.6 years. The interval between circumcision and commencement of urine leakage ranged between 2 and 14 days, with a mean of 7days.

The circumcision was performed by a traditional practitioner in one patient, a nurse in two patients and a clinical officer in two patients. The resulting fistula was located at the corona glandis in four patients and on the glans penis in one. The estimated diameter of the fistula varied between 1 and 8 mm, with a mean diameter of 3 mm.

The catheter was left in for 5 to 7 days, the mean being 6.4 days. The duration of follow up varied from 3 to 20 weeks, with a mean of 7 weeks. None of the patients had had a previous repair attempt. During the period of follow up no patient developed infection and there was no recurrence of fistula or any other complication. For the older children the excitement and joy of passing urine in one natural stream again from the tip of the penis was remarkable.

Discussion

Post-circumcision UCF is not an uncommon condition. In the four-year period from 2002 we have seen eight patients, of whom five have undergone repair and are the subjects of this report. At a three-day workshop conducted in Zanzibar by a British Paediatric Urologist in 2002 in which the authors participated, 11 UCF patients were successfully operated on. At the same workshop there were 4 patients for hypospadias repair and 2 re-do hypospadias patients. The fistula is commonly caused by taking a deep

needle bite that engages the urethra¹. It may also result from the use of non-absorbable suture. In patients who start leaking urine soon after circumcision the injury may consist of an actual incision into the urethra. UCF has been reported to occur as late as 13 years after circumcision². There may, therefore, be a need for more than a few weeks of follow up, but some of our patients did not return for the later appointments for follow up. It may be presumed they had no complaints and saw no reason for continued attendance.

The essence of the repair technique is an elliptical incision around the fistula, raising skin flaps, closing the trimmed edges of the opening in the urethra, developing a dartos fascial graft which is then sawn over the closed urethra, and finally closing the skin. In case there is more than one fistulous opening close together they should be converted into a single fistula before repair. It is important not to superimpose the suture lines, and in case of a large fistula, one may need to raise a wide-based skin flap to facilitate closure. The use of diathermy is quite unnecessary, and its use on a child's penis can lead to total ablation of the penis, a disaster indeed³. Baskin et al⁴ have reported a technique of repair for coronal or distal shaft fistulas that involves splitting the glans and using a Mathieu type skin flap. For cases with inStract glanular urethra this would seem to us to be an unduly extensive procedure.

The report by Sahin et al⁵, in which 32 adult patients underwent UCF under local anaesthesia is of interest in that half of the patients had no catheter after the repair and were discharged home on the day of operation while catheterized patients were in hospital for 4 to 6 days. The uncatheterized patients fared just as well as catheterized patients after repair, and in fact, had a lower rate of wound infection. Avoidance of a catheter in children presents a very attractive prospect, as it would carry a considerable reduction in discomfort, allowing patients to go home on the day of operation. However, local anaesthesia is not an option in a child except possibly for those at the end of teen age.

So long as circumcision, a seemingly simple procedure, is performed by the clinical officer or nurse or nurse orderly who has watched the doctor doing it a few times then goes off with the impression that he or she can do the next one on his or her own, post-circumcision UCF will continue to be a problem in our community.

There is a current trend towards routine circumcision among tribes who traditionally did not practice it, thus creating an increasing demand for circumcision in the absence of competent personnel to perform it.

The best way to address UCF is to prevent its occurrence. To argue that circumcision should only be performed by trained surgeons is unrealistic in a country of 35 million people with less than 100 practicing surgeons, half of whom may be in the capital city and most of the rest in other urban centres. It is more realistic to advocate that those currently performing the procedure should be availed the required training.

Graduate general practitioners, Assistant Medical Officers and Clinical Officers can be trained, with a minimal investment of resources, to be able to perform this operation safely. Indeed, the medical school curricula and the surgical internship should include training for this and other procedures of a comparable nature and complexity to an adequate level of proficiency for their graduates.

Some of the patients with UCF encountered previously (not in this series) were circumcised by MD's. Since the regulations of practice in this country do not allow nurses, nursing orderlies and other cadres of this category to perform surgical procedures on patients, the public and the various personnel cadres should be educated to conduct themselves accordingly.

References

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