Innovations Galore-15 (a new technique to repair recurrent urethrocutaneous fistula following hypospadias repair)

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Introduction:

It is a nightmare to even the well experienced Urologist while planning to repair a recurrent urethrocutaneous fistula following hypospadias repair. Avoiding overlapping of suturelines, advancing adjacent skin flap over the site of fistula closure, interposing watertight tissues like dartos or tunica vaginalis are some of the steps taken to avoid recurrence after repair of post hypospadias repair fistula. But scarred skin not allowing a satisfactory mobilization of tissues, impaired vascularity around the fistula and tension of skin closure over the interposed tissue form the causes of failure in such repairs. The procedure adopted by us included placing a vascularised dartos pedicle over the site of fistula/fistulae after closing them in 2 layers, with a suitable sized skin patch over the pedicle to achieve skin cover over the area of defect without tension on suturelines.

Materials and methods:

In the period from March,2016 to 14th June 2016, we managed 6 cases of recurrent urethrocutaneous fistulae following failed hypospadias repair. Age varied from 4 years to 27 years. The number of earlier attempts at repair of these fistulae varied from 2 to 4 .

The first patient with penoscrotal hypospadias, at the age of 1, underwent Chordee correction on 25.3.2002 and Dennis Browne urethroplasty on 23.12.2002. Later he underwent urethral calibration twice on 1.2.2003 & 9.5.2003 and fistula repair thrice on 31.12.2003, 26.5.2007 & 21.5.2008.At the age of 15, he was still having a persistent proximal urethrocutaneous fistula.

.Another patient aged 14 years , was still having a proximal penile fistula after 3 attempts to correct a fistula which failed . A third patient with proximal penile hypospadias, aged 4 years now ,had undergone 2 repairs earlier, but was still having 3 fistulae.

In the first two patients, under spinal analgesia, oval shaped incision was made around the fistula. Skin edges were dissected off the fistula. Fistula edges were excised and closed in 2 layers over a 16 F Foley catheter placed in urethra. The incision was extended into the scrotum. A triangular patch of skin to match the size of the skin defect was marked on one side of the incision and was dissected with the dartos muscle underneath it intact. The dartos was dissected towards scrotum as a flap with a broad base and adequately to advance it to the skin defect in penis without tension and was sutured over the site of fistula closure. The skin patch over dartos was sutured to the edges of skin defect all around,

about 5 mm from the edges of fistula distally and on the other sides. The skin of the extended incision was sutured over the dartos flap.

In the third patient, after freshening the edges of the fistulae and closing them in 2 layers, penile skin below the corona raised as a flap with the underlying penile dartos raised as a vascularised pedicle flap, was brought ventrally and was sutured over the skin deficit ventrally after closure of fistulae. The skin edges of the flap were sutured to the edges of skin deficit without tension.

The fourth patient had tunica vaginalis flap interposed over his 4 times failed multiple fistulae including a scrotal fistula which was serving as his perineal urethrostomy . The fifth one had Mathieu repair for his 3 times failed distal fistula. The sixth patient had the adjacent skin and penile dartos raised as flap and was advanced across the site of fistula closure and sutured to the skin edges.

Results :

The techniques described above achieved the dual goals of interposing a vascularised pedicle flap over the site of fistula closure and achieving a tensionfree skin closure in the first three patients.One patient had delayed healing in the scrotal part of wound. On followup till now there is no leak and the healing is satisfactory. The other 3 patients who were operated by other techniques, since they did not need this skin flap over a vascularised dartos pedicle, also have healing without fistulae.

Discussion:

Penile dartos flap with skin patch is preferred for repair of multiple fistule/ large fistulae extending over the entire length of the shaft of penis, provided spare skin was still available below the corona dorsally after the previous repairs. Scrotal dartos was chosen for proximal penile fistulae. The patients who underwent repair with scrotal dartos were advised to wear tight innerwear as scrotal support, to avoid the tension on suturelines by the hanging scrotum .

Literature survey for such a procedure of including a skin patch over dartos flap to repair fistula following hypospadias repair did not reveal any such reported earlier.

Conclusion:

Necessity is the mother of invention/innovation.