

## EVALUATION OF VARIOUS RECONSTRUCTIVE PROCEDURES FOR HYPOSPADIAS

R.N. SHARMA, S. SRIVASTAVA

### SUMMARY

30 patients of hypospadias repaired by Denis Browne, Thompson's, Mustarde's, Asopa I & II Urethroplasty have been studied. It was observed that most of the midpenile and distal penile hypospadias can be successfully repaired by single stage procedures while proximal varieties require double stage Denis Browne Urethroplasty.

(Key Words : Hypospadias, Repairs)

The availability of numerous techniques for the repair of hypospadias is an indication in itself that no single technique gives uniformly good results. Till the middle of present century all the cases were repaired in two stages. One stage repair was introduced by Devine, Horton and Hodgson about two decades ago. Since then, number of one stage repairs have been introduced by various surgeons with comparable complication rates. Compared to staged procedures, these techniques offer distinct advantage of fewer operations and lesser expenditure on individual patients with the added advantage of the operation being performed using the skin unscarred from previous operations and also whose original blood supply has not been disturbed. The main impediment to the success of this procedure in the past had been an inadequate release of chordee which has now been eliminated since the introduction of artificial erection technique.

### Material and Methods

This paper is a prospective study of 30 cases of hypospadias repaired in a period of one year. The operative procedures used in our study were (Tab. 1)

- 1 Denis Browne Urethroplasty — Reserved only for the cases who had undergone chordee correction previously and patients with proximal penile hypospadias.

Table-I. Operative Techniques used According to site of Meatus & Stage of Correction

Site of meatus	No. of cases	Technique used
1. Glandular (with chordee)	1	Duplay's method chordee correction
2. Coronal	4	Thompson's
3. Ant. penile (without chordee)	3	Thompson's
(with chordee)	3	Mustarde's
4. Mid. Penile	6	Asopa I
	4	Asopa II
	3	Denis Browne's
5. Post Penile	2	Denis Browne's
Peno-scrotal	3	Denis Browne's
Scrotal	1	Denis Browne's

2. Thompson's repair — For distal hypospadias without chordee.
3. Mustarde's repair — For distal hypospadias with chordee.
4. Asopa I and II repair — For distal and midpenline hypospadias with chordee.

One patient having chordee without hypospadias was treated by Duplay's method of chordee correction only.

### Observations

The age of patients ranged from 1½ years to 19 years with maximum number of cases being between 6-12 years. Youngest patient operated was 1½ years with peno-scrotal hypospadias who had undergone chordee correction previously.

Oldest patient aged 19 years presented with mid penile hypospadias and was repaired by Asopa-I technique

About 80% patients had distal and midpenile varieties while proximal variety accounted for about 20% of patients. Out of 13 patients with mid penile hypospadias, three had already undergone chordee correction and rest 10 patients were fresh cases with chordee.

The patient with glandular hypospadias had severe chordee. One patient having glandular hypospadias with severe chordee was treated by Duplay's method of chordee correction..

Two patients developed fistula after Denis Browne urethroplasty due to stitch sepsis. Among the two patients who developed fistula after Asopa-I repair, one also suffered from partial necrosis of flap with fistula formation at the site of necrosis. The other case developed fistula at the site of anastomosis.

Two patients each repaired by Asopa-I and Asopa-II technique developed stricture at the site of anastomosis.

Meatal stenosis was observed in 2 patients repaired by Asopa-I technique while only 1 patient repaired by Denis Browne method and one patient repaired by Mustarde's method suffered from this complication (Tab-II).

Table-II. Complications

Complications	Flip Flap	Asopa I	Asopa II	Dennis Browne	Mustarde
Fistula	1	2	1	2	0
Flap necrosis	1	1	0	0	0
Meatal stenosis	0	2	0	1	1
Stricture	0	1	1	0	0

### Discussion

Denis Browne urethroplasty has been the most widely acceptable technique of two stage urethroplasty. Although all varieties of hypospadias except glandular and coronal varieties were amenable to this repair, major disadvantage being the meatus did not reach the tip of penis but was limited to glandular level. Out of nine patients repaired two developed fistula and one patient

developed meatal stenosis. Although author himself reported 6% fistula rate in his series of 50 patients, Talwar et al reported 100% failure rate with 66.6% fistula formation and 33.3% flap necrosis. All the patients who developed fistula required surgical correction because of rapid epithelization time, infection, scar formation and dorsal curvature.

Thompson's flip flap repair is a technically easier repair for anterior hypospadias without chordee giving highly satisfactory shape to glans with very low complication rate. Out of seven patients repaired by the technique, one patient developed fistula and one patient developed partial necrosis of the flap. Fistula healed after recatheterization and flap necrosis healed with conservative management. In a series of 21 patients presented by author himself, none developed partial necrosis of the flap.

Three patients were repaired by Mustarde's method. Only one patient developed meatal stenosis which responded to soft catheter dilatation and no one developed fistula.

Seven patients were repaired by Asopa-I technique. Two patients developed fistula and one patient developed partial necrosis of the flap. One of the fistulae developed at the site of anastomosis and the other developed through flap necrosis. Both healed by themselves after recatheterization through the neo-urethra for further 10 days. One patient developed stricture at the site of anastomosis which responded to soft catheter dilatation. Two patients developed meatal stenosis, all of whom were managed by soft catheter dilatations. Thus although the complication rates with Asopa-I technique were high, they all were minor and none required surgical correction.

High incidence of meatal stenosis prompted us to switch over to Asopa-II technique. Three cases were repaired by Asopa II technique. Only one patient developed fistula at the site of anastomosis which healed after recatheterization through the neo-urethra for further 10 days. None developed meatal stenosis. In a series of 68 cases repaired by Asopa-I technique, reported by author himself, 15% developed fistula and three patients

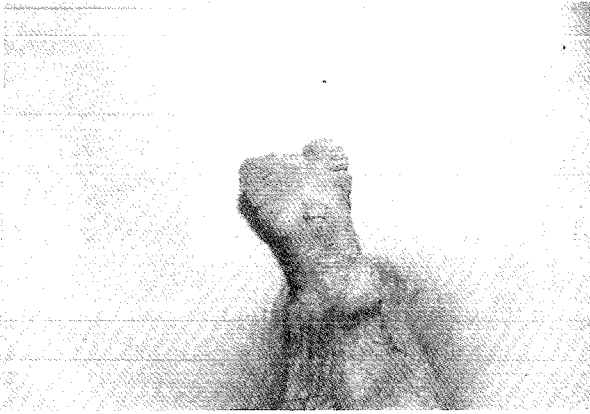


Fig. 1. Denis Browne Urethroplasty ; Pre operative view



Fig. 2. Denis Browne Urethroplasty ; Post-operative view

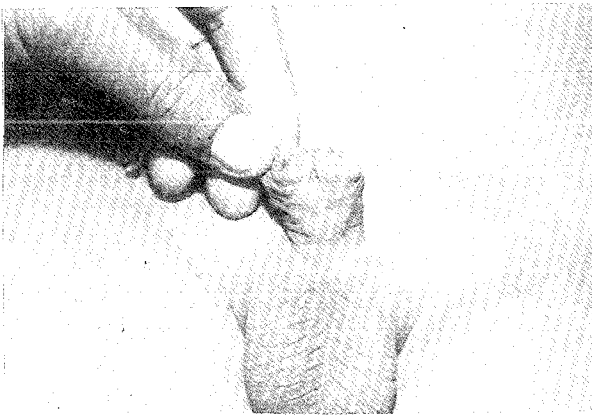


Fig. 3. Asopa's Urethroplasty ; Pre-operative view

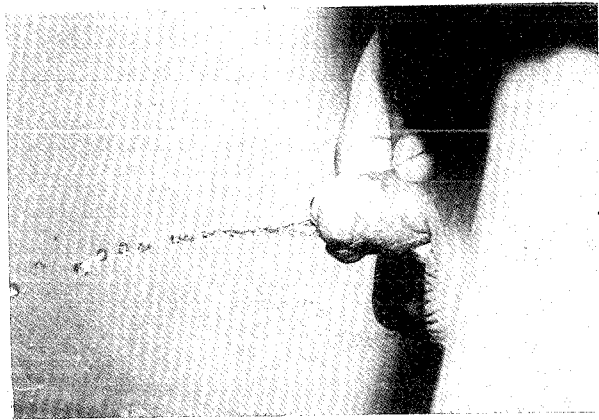


Fig. 4. Asopa's Urethroplasty ; Post operative view

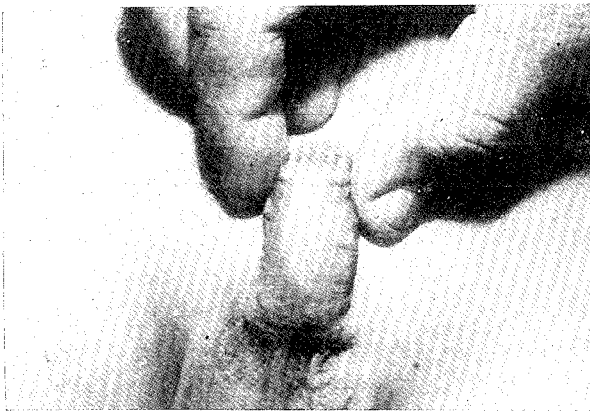


Fig. 5. Thompson's Urethroplasty ; Pre operative view

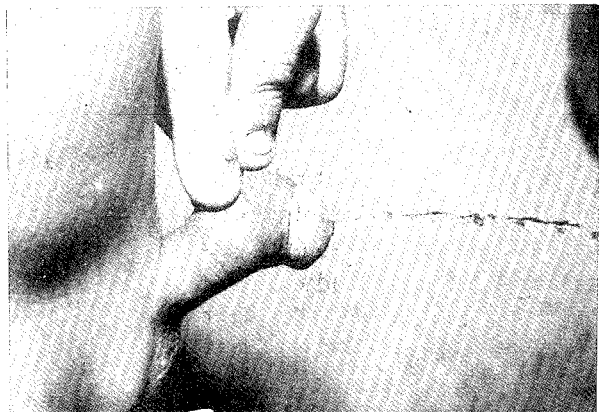


Fig. 6. Thompson's Urethroplasty ; Post operative view

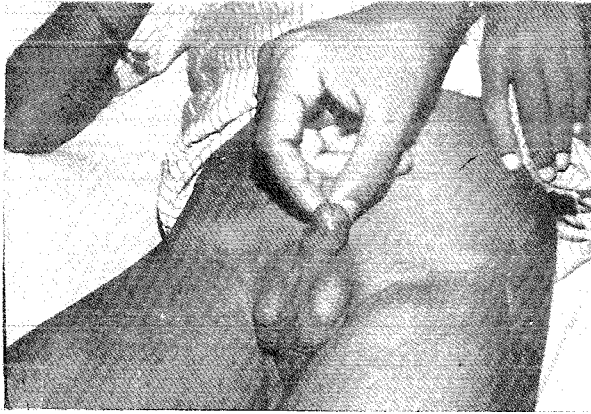


Fig. 7. Mustarde's Urethroplasty ; Pre operative view

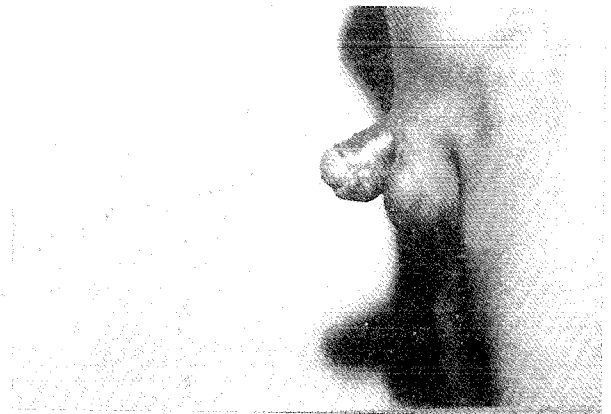


Fig. 8. Mustarde's Urethroplasty ; Post operative view

developed stricture, all of whom required surgical correction. Talwar et al reported a series of 12 cases repaired by Asopa-II technique with 33.3% fistula formation, 25% flap necrosis and 25% incidence of meatal stenosis.

### Conclusion

Thus most of the cases can be repaired by

various single stage repairs depending upon the position of ectopic meatus and presence or absence of chordee with acceptable complication rates. Two stage repairs should thus be reserved for only those patients having severe degree of hypospadias.

### REFERENCES

1. ASOPA, H.S. ELHENCE, E.P. AND ATRIA, S.P. et al. : One stage correction of penile hypospadias using a foreskin tube. A preliminary report. *Int. Surger.* 1971 ; 55 : 435.
2. BROWNE D. : An operation for hypospadias. *Lancet*, 1946 ; 1 : 141.
3. BROWNE, D. : Operation for hypospadias. *Postgraduate Medical Journal*, 1949 ; 25 : 367.
4. BYARS, L.T. ; Functional restoration of hypospadias deformity. *Surg. Gynec. & Obst.* 1951 ; 92 : 149.
5. CONVERSE, J.M. : *Reconstructive Plastic Surgery*, Volume V.
6. DUCKETT, J.W. JR. : Transverse preputial island flap technique for repair of severe hypospadias. *Urologic Clinics of North America*, 1980 ; 7 : 423.
7. GILLES, R.F. AND McLAUGHLIN, A.P. III : Injection technique to induce penile erection. *Urology*, 1974 ; 4 : 473.
8. MUSTARDE, J.C. : One Stage correction of distal hypospadias and other people's fistulae, *British Journal of Plastic Reconstructive Surgery*. 1965 ; 18 : 413.
9. NESBIT, R. : Plastic produce for correction of hypospadias. *Journal of Urology*, 1941 ; 45 : 699.
10. TALKWAR, S., RANA B.S. and SAHOO, G.N. : Evaluation of various techniques of One-Stage repair of hypospadias. *Ind. J. of Surg.*, 1986.
11. THOMPSON, H.G. : One Stage double sickle flap correction of distal penile hypospadias. *Plastic and Reconstructive Surgery*, 1967 ; 40 : 575.

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