

TRIFURCATION OF URETHRA—A CASE REPORT

I.N. TIWARI, R.K. SANDHIR AND ARUN GOEL

SUMMARY

A rare case of trifurcation of anterior urethra, in a twenty five year old patient, who presented with dribbling of urine from the accessory opening is being documented. The embryologic basis, clinical presentation and treatment has also been discussed.

(Key Words : Anomaly, Congenital, Urethra)

Trifurcation of urethra is an extremely rare congenital anomaly. Forgaard and Ansell reported the first case of this anomaly in 1966. The other case documented by Wirtshafter et al. (1980) had complete trifurcation of anterior urethra.

Case Report

S.M., aged 25 years, had dribbling from the dorsum of penis while voiding urine. Examination revealed two abnormal openings on the dorsum of penis in addition to a normal external urethral meatus. Of these abnormal openings one was present on the glans near the corona and the other was in the shaft of penis. Patient had dorsal chordee. On instrumentation, 18 fr. Lister bougie

could be passed through the normal passage. The abnormal openings at glans and shaft could accommodate a probe and 10 fr. bougie respectively (Fig. 1). The urethrogram showed a normal urethra with two additional channels (Fig. 2). One abnormal communication was at the junction of membranous with spongy urethra and the other at fossa navicularis. Other investigations like haemogram, urine examination and intravenous pyelogram were normal. The patient was operated and after dissecting the dorsal chordee, the additional tracts were excised. The skin defect was closed with z-plasty. Foley's catheter was left for 6 days. Patients recovery was uneventful (Fig. 3).

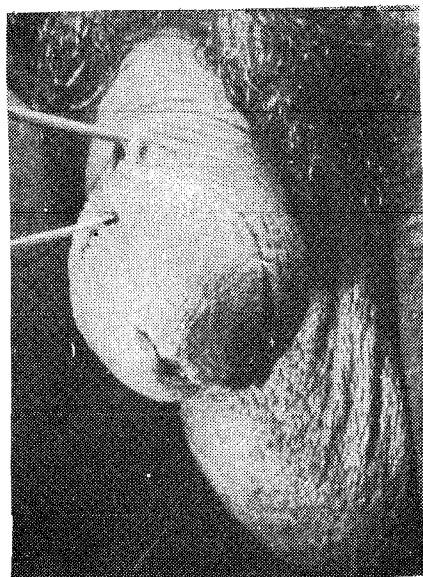


Fig. I. Pre-operative penis showing three urethral openings.

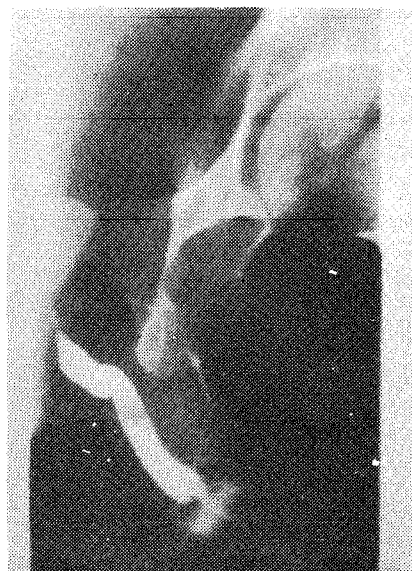


Fig. II. Urethrogram.



Fig. III. Post-operative picture showing the result.

Discussion

Vesalius quoted Arab authors who described a man with 3 channels in the penis. The channels conveyed urine, spermatic fluid and prostatic secretion.

Slotkin and Mercer (1953) mentioned it as a result of bifurcation of urethral analog by continuation of splitting of urorectal septum. Meyer (1911) thought it to be the result of unfolding of lateral mesodermal elements into urethral analog. The anomaly may result by fusion of paired buds of genital tubercle too late or too far posteriorly or by non regressing cloacal membrane preventing reinforcement of central portion of abdominal wall. It may be a result of inflammatory process that seal the normal urethra distally and causes fistula by extravasation (Selvaggi and Goodwin,

1972).

In our case of trifurcation, the anomalous openings were all dorsal to the normal urethra. It seems that embryologic basis of duplication and trifurcation may be related. In explaining the occurrence of duplication, several theories have been advanced (Selvaggi and Goodwin, 1972 & Slotkin and Mercer, 1953). But the anatomy of malformation varies so much from case to case that it is unlikely that one embryologic explanation can explain all the cases (Casselmann and Williams, 1966). We believe that this is true for trifurcation as well. The previously reported cases of trifurcation had abnormalities of the upper urinary tract as well. However, our case had no such abnormality.

Taruffi (1891) described four types of accessory urethral channels. Type I—Blind ending canals; Type II—Seminiferous canals; Type III—Uriniferous canals, communicating with both urethra and surface of penis; Type IV—Certain congenital fistulas. Our case according to this classification belongs to Type III.

The type of malformation dictates whether the patient will be symptomatic. Symptoms may include incontinence, multiple streams, urethritis and problems related to chordee. Surgical management also depends upon the type of the malformation, and usually consists of excision of the accessory tracts and urethroplasty.

Conclusion

Patient was followed up for 6 months and he was passing urine normally.

REFERENCES

1. CASSELMAN, J. AND WILLIAMS, D.I. : Duplication of the urethra. *Acta Urol. Belg.* 1966; 34 : 535.
2. FORGARRD, D.M. AND ANSELL, J.S. : Trifurcation of the anterior urethral. a case report *J. Urol.* 1966; 95 : 785.
3. MEYER, R. : Uber embryonale Gewebsanomalien and ihre pathologische Bedeutung im allgemeinen und solche des mannlichen Genitalapparates im nespmderen. *Ergeon. d. allg. Path. U. path. Anat.*, 1911; 15:430.
4. SELVAGGI, F.P. AND GOODWIN, W.E. : Incomplete duplication of the male urethra—Report of an unusual case. *Brit. J. Urol.* 1972; 44 : 495.
5. SINGH, J.P., MEHRA, S. AND NAGABHUSHANAM, V. : Complete duplication of bladder urethra. a case report with review of the literature, *J. Urol.* 1973; 109 : 512.
6. SLOTKIN, E.A. AND MERCER, A. : Case of epispadias with a double urethra. *J. Urol.* 1953; 70 : 743.

7. TARUFFI, C. : Sui canali anomali del pene Bull. d. med. di Bologna. 1891; 2 : 275. Quoted by Wirtshafter et al. (1980).
8. WIRTSHAFTER, A., CARRION, H.M., MORILLO, G. AND POLITANO, V.A. : Complete trifurcation of the urethra. J. Urol. 1980; 123 : 431.

The Authors

DR. I.N. TIWARI, M.S., M.Ch., *Consultant in Plastic Surgery & Head of the Deptt. of Burns, Plastic and Maxillofacial Surgery, L.N.J.P.N. Hospital, New Delhi-110002.*

DR. R.K. SANDHIR, M.S., M.Ch., *Senior Medical Officer, Deptt. of Burns, Plastic & Maxillofacial Surgery, L.N.J.P.N. Hospital, New Delhi-2.*

DR. ARUN GOEL, M.S. *Senior Medical Officer, Deptt. of Burns, Plastic & Maxillofacial Surgery, L.N.J.P.N. Hospital, New Delhi-110002.*

Request for Reprints

DR. I.N. TIWARI, *Consultant in Plastic Surgery & Head of the Deptt. of Burns, Plastic & Maxillofacial Surgery, L.N.J.P.N. Hospital, New Delhi-110002.*