A CASE REPORT OF URETHRAL INJURY

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PRESENTATION OF CASE

Mrs. S., a 23-year-old, married for 2 years presented to us with continuous leakage of urine for the last three months. The problem arose when she delivered a dead full term foetus at home by a dai in March 2016. She remained in labour for 2 days before delivery. After three days of delivery, she presented with continuous leaking of urine. She had to wear sterile pads most of the time for protection. Her medical history was unremarkable. This patient had complete total longitudinal disruption of all the muscular elements of the urethral sphincter. The diagnosis of longitudinal disruption of urethral sphincter was made followed by primary reconstruction with an approximation technique M. M. Koraintin et al.[1] The muscular elements were approximated taking care not to strangulate the tissues by overtightening the knots. A simple suture technique was used rather than mattress suture as in the case of anal sphincter repair.

DIFFERENTIAL DIAGNOSIS

Vesicovaginal Fistula

This is an abnormal fistulous tract extending between the bladder and vagina that allows continuous involuntary discharge of urine into vagina (Lee RA et al 1988[2]).

Ureterovaginal Fistula

This is a communication between the distal ureter and the vagina. The urine from the ureter bypasses the bladder and flows into vagina (Gerber GS et al 1993[3]).

Urge Incontinence

This occurs when one has a strong sudden need to urinate. The bladder then squeezes or undergoes spasm and they leak urine.

Stress Incontinence

This is the involuntary loss of urine on coughing, sneezing, running or heavy weight lifting.

Overflow Incontinence

This is the involuntary release of urine. Due to weak bladder muscles or due to blockage-when the bladder becomes overly full, even though the person feels no urge to urinate.

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Functional Incontinence

This is a form of urinary incontinence in which a person is usually aware of the need to urinate, but for one or more physical or mental reasons, one is unable to get to a bathroom. This case is peculiar as it did not fit into any of this category and was a rare case of urethral injury.

CLINICAL DIAGNOSIS

In this patient, there has been total longitudinal disruption of all muscular elements of the urethral sphincter. The repair of longitudinal disruption of the urethral sphincter was made by primary reconstruction with interrupted sutures using approximation technique (R. J. Fernando et al.[4]).

Anterior urethral repair was done. Posterior urethra was separated from anterior vaginal wall. A large defect in urethra was identified. Interrupted sutures were given to the sphincter. Longitudinal muscles of posterior urethral and anterior urethra repaired. Anterior vaginal wall was closed by continuous absorbable sutures. In these cases, first of all diagnosis of urethral sphincter injury should be positively made. The extent of injury and all anatomical landmarks should be identified.

There was simple transection injury along with discontinuity of sphincter circumference which was identified.

The identification of the muscle component of sphincter complex is important to be able to accurately place single monofilament sutures through all layers. The idea is to approximate the muscular sphincter components loosely taking care not to obstruct the blood supply of the sphincter itself. By using thin monofilament resorbable suture material post-operative scarring was minimised. Polyfilament sutures might cause additional shear trauma to muscle elements. In this patient, incontinence was relieved. Post-operative period was uneventful, catheter was kept for 3 weeks. Patient was totally continent after removal of catheter.

PATHOLOGICAL DISCUSSION

Haemogram & ABO Rh. Gp.
Coagulation profile- normal.
Urine R\E & culture sensitivity- urine sample was tested for signs of infection. The sample showed no infection. Culture sensitivity was done.

LFT & RFT-WNL

Patient's 3-swab test was done at Govt. Medical College and revealed all the swabs were dry. 3-swab test was repeated at ASCOMS and was negative. Three gauze swabs are placed into the vagina using a speculum- one at the top, one in the middle and one at the bottom. A small catheter is put into the bladder and blue dye is passed through it into the bladder. If any of the swabs are stained blue, it means urine has leaked from the bladder into the vagina. So a diagnosis of fistula is made in the patient.

Per speculum examination revealed no fistulous opening.

Cystoscopy examination- patient underwent cystoscopy at Govt. Medical College and it was inconclusive and patient was referred to a tertiary care hospital.

Patient was admitted in Dept. of Obstetric & Gynaecology at ASCOMS and cystoscopy was repeated. Cystoscopy revealed a large defect 2.5 - 3 cm present beyond bladder neck. No fistulous opening was identified in vagina. Patient was diagnosed as a case of urethral injury and surgery was planned.

DISCUSSION OF MANAGEMENT

This patient from her history appeared to be a case of VVF. There was true incontinence and patient was dribbling urine continuously. 3-swab test of the patient was done and the three swabs were dry. On cystoscopy, no fistulous opening was identified in the vagina. So VVF was ruled out.

The question is whether the urethral sphincter may be reconstructed after longitudinal injury similar to anal sphincter injuries. Analogue to obstetric anal sphincter repair, an approximation repair of the sphincter may be feasible. An overlap repair is possible in anal sphincter repair but because of the little tissue available in urethral sphincter, this is not an option (AH Sultan, et al 1999[5]). We are presenting a case of urethral sphincter injury resulting in total longitudinal disruption of the muscular components of the urethral sphincter complex.

After making a diagnosis of urethral sphincter injury, a primary approximation repair was done. Follow-up of one and half year is promising with the patient being totally incontinent. Longitudinal disruption of the muscular elements of the sphincteric urethra may be primarily reconstructed with good success using an approximation technique with simple interrupted sutures.

Urinary incontinence is the involuntary leakage of urine. In both women & men, incontinence can be caused by a wide range of diseases, accidents, surgical operations, medication and psychosocial factors. According to American Urological Association, one quarter to one third of men and women in the United States experience urinary incontinence. It is more common among women than men. (An estimated 30% of females aged 30 - 60 are thought to suffer from it, compared to 1.5 - 5% of men). Trauma to the urinary sphincter mechanism may lead to severe urinary incontinence. It may be result of trauma during birth, blunt or penetrating trauma to the pelvis. Obstetrical trauma of the urethra is the result of foetal head disproportion leading to prolonged foetal head compression of the bladder and urethra against the pelvic bones, causing extensive ischaemic necrosis and subsequent fistula formation.

Modern obstetrical techniques have virtually eliminated this type of injury in developed countries. However, it may be seen in up to 4 women per 1000 vaginal deliveries in some non-industrialised areas. While most fistulas occur between the bladder & vagina, injury to proximal urethra involves as much as 17% of all obstetric fistulas (Hilton P et al 1998.[6]). When there is involvement of proximal urethra virtually all patients present total urinary incontinence as their major complaint. Most urethral fistulas due to obstetric complications are 1.5 cm in dia or greater, therefore are usually seen on vaginal examination. The urinary sphincter is rather well protected underneath the pubic symphysis suspended within the pelvic floor. Childbirth may cause postpartum urinary incontinence, although the exact mechanism of injury is poorly understood. Severe or direct trauma to sphincteric urethra may lead to complete disruption of all muscular elements. This case report presents a patient with a direct injury to the whole length of the sphincteric urethra, where the urethral lesion was limited to the longitudinal cut through all muscular elements of the sphincter complex.

FINAL DIAGNOSIS

A large defect of 2.5 - 3 cm beyond bladder neck clinched the diagnosis as a case of urethral injury. It is a rare case where urethral injury was responsible for incontinence. One and half years after urethral trauma and reconstruction, the patient is socially continent. During maximum straining, she loses a few drops and uses one safety pad per day. Longitudinal urethral injury to the sphincter complex is rare. Obvious severe urethral lesions should be recognised & longitudinal tears should be diagnosed. This case shows that an approximation technique of primary urethral sphincter repair may be successful.

When sphincter structures are positively identified a primary repair should be attempted.

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