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CASE REPORT

ACUTE EXACERBATION OF A URETHRAL DIVERTICULUM BY TENSION-FREE VAGINAL TAPE (TVT)

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INTRODUCTION

The tension-free vaginal tape (TVT) procedure has become the operation of choice for female stress urinary incontinence (SUI) worldwide. Several common and uncommon complications have been described. We believe this case to be the first report of a patient with a urethral diverticulum, who erroneously had a TVT device placed and which then led to acute exacerbation of her incontinence, pelvic pain and voiding difficulties. The post-operative diagnosis was made by voiding cystourethrogram (VCU), and surgical excision of the diverticulum with reconstruction of the urethra was performed, incorporating a Martius fat pad. The patient is currently clinically continent with occasional decreasing episodes of bladder urgency. The TVT procedure has simplified the surgical treatment of pure SUI, but specialist pelvic surgeons should be involved in the management of patients with complicated incontinence.

CASE REPORT

A fifty-three year old woman presented with a long history of both stress urinary incontinence [SUI] and continual dribble incontinence. A pre-operative voiding cystourethrogram [VCU] showed a normal appearing bladder with 3 cm prolapse of the bladder base below the pubo-coccygeal line on straining. The urethra appeared normal. A smudged collection of contrast medium at the urethral meatus was incorrectly interpreted as contrast medium that had collected between the labia due to her incontinence (Fig 1). She then underwent an implantation of the TVT device and limited anterior repair.

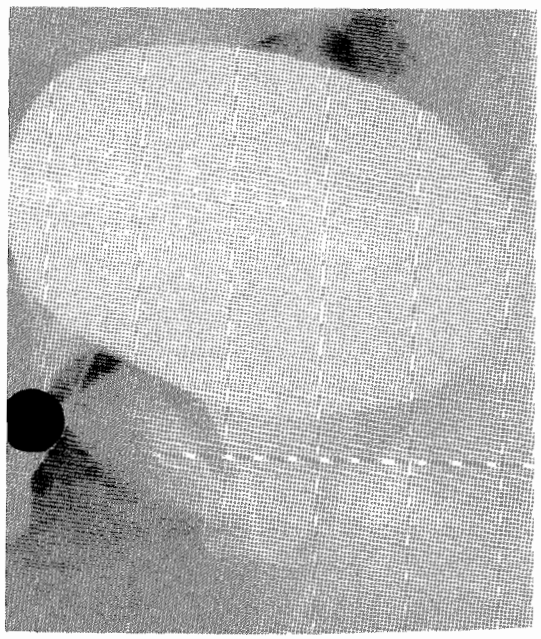

Fig. 1: Pre-operative VCU showing a smudged collection of contrast medium near the urethral meatus, erroneously interpreted as being between the vulva.

Post–operatively she complained of progressive pelvic pain and total urinary incontinence and was referred to our unit four months later. On vaginal examination an obvious cystic mass occupied most of the

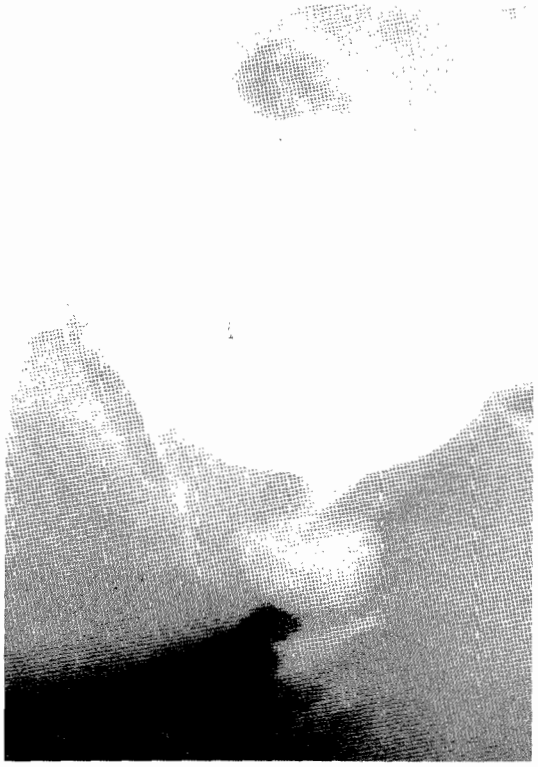

Fig. 2: VCU done 4 months after placement of the TVT device, clearly showing the large urethral diverticulum

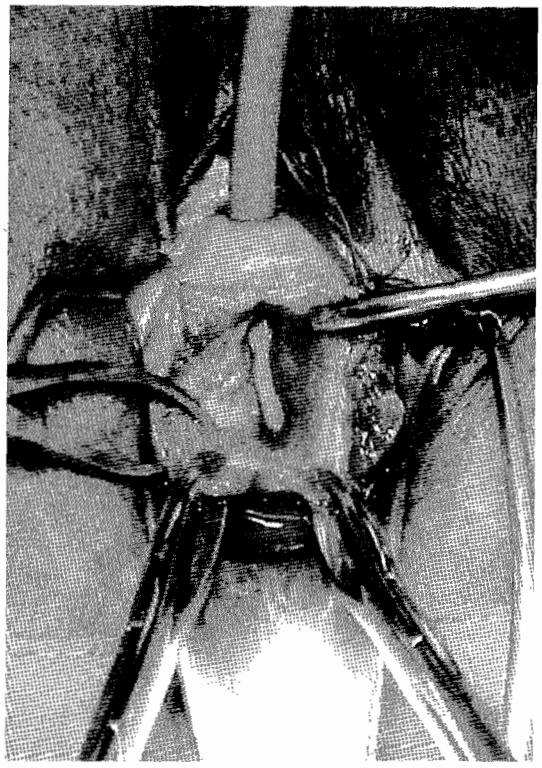

Fig. 3: Intra-operative photograph of the exposed and incised diverticulum showing the size of the urethral defect

vaginal introitus and mild pressure on the mass caused a urine leak from the urethral meatus. A VCU showed a large urethral diverticulum that filled from the bladder during the filling phase and that dribbled urine into the vagina (Fig 2). The patient could not empty her bladder.

At cystoscopy the TVT tape was found to be excessively tight around the extreme distal urethra. The urethral diverticulum had a wide opening extending from 5 mm distal to the bladder neck to 5 mm from the external urethral meatus. The bladder was intact and no fistula was seen. A midline vaginal incision was made. The tight TVT tape was exposed and the central 2 cm around the urethra was excised. The diverticulum was fully mobilised, opened and the wall excised leaving only enough tissue with which to close the urethral defect (Fig 3). Closure was performed over an F22 catheter and a Martius fat pad was sutured over the urethral repair. The incision in the vaginal wall was closed and a vaginal pack inserted for 36 hours. The urethral catheter was removed after 14 days. Broad-spectrum antibiotic coverage was given for 3 days followed by Ciprofloxacin for 14 days. Histological examination of the resected wall of the diverticulum showed all the features of a congenital diverticulum. Ten weeks post-operatively the patient's SUI and dribble incontinence have symptomatically cleared up and her post void residual urine consistently remains below 40 ml. She still has some urgency with twice weekly episodes of urge incontinence, which however is improving rapidly.

DISCUSSION

Since its description by Ulmsten the TVT procedure has become the most popular operation for SUI in many parts of the world as this minimally invasive procedure has a success rate in excess of 80% and is well tolerated by the majority of patients[1]. Complications do occasionally occur and include immediate complications such as bladder perforation and retropubic haematomas[2]. Occasional reports of severe complications including severe retropubic haemorrhage, lacerations of iliac vessels and bowel

perforations have been published[2]. Long-term complications include voiding dysfunction, urethral erosion and bladder outlet obstruction[2,3]. We believe this to be the first reported case of post TVT voiding dysfunction and total incontinence due to the exacerbation of the effects of a urethral diverticulum.

A urethral diverticulum in a woman can mimic any pelvic disorder and a large percentage of patients present as diagnostic dilemmas, with a long history of many unhelpful visits to several physicians, as reported by Romanzi et al.[4]. It is thus not unusual that a urethral diverticulum be missed on clinical examination as had happened in this patient, as the diverticulum is only palpable in 52% of cases[4]. Unfortunately the radiologist in this case had misinterpreted the smudged collection of contrast medium around the distal urethra on her first VCU as contrast collecting between the labia having leaked from the external meatus. On her subsequent VCU done four months after placement of the TVT, the diverticulum was very obvious due to the aggravating effect of the distal urethral obstruction by the TVT device (Fig 2). If a urethral diverticulum is suspected and the VCU is not conclusive, the diagnosis can be confirmed by positive pressure urethrography, transvaginal ultrasound or MRI[4].

The recommended treatment for a urethral diverticulum with associated SUI consists of diverticulectomy plus or minus a Martius flap, pubovaginal sling and urethral reconstructive procedures when indicated[4]. We did not replace the TVT device with another sling or suburethral tape at our operation as the urethral defect was quite extensive and we were concerned about subsequent urethral erosion. Furthermore the available intact distal urethra was so short that another sling would probably have caused distal urethral obstruction again. Currently the patient does not have clinical SUI as indeed happened to the majority of cases described by Romanzi who did not have pubovaginal slings inserted at their primary repairs[4].

The ease of performance and high success rate of the TVT device and other suburethral tapes have greatly simplified the surgical treatment of pure uncomplicated SUI[5]. This has effectively moved a large proportion of this type of surgery out of the domain of the specialist pelvic surgeon back to the generalist urologist and gynecologist. However, in this case the patient's very long history, symptoms of continual dribble and unusual VCU findings should have alerted her operating physicians to a possible diagnosis other than uncomplicated SUI[4] and should have led to involvement of a specialist pelvic surgeon[4,5].

REFERENCES

1. Nillson CG, Kuuvan N, Falconer C. Rezapour M, Ulmsten U. Long term results of the tension-free vaginal tape (TVT) procedure for surgical treatment of female stress incontinence. *Int Urogynecol J* 2001 (supp. 2), S5-S8.

2. Tamussino KF, Hanzal E, Kolle D, Ralph G, Riss PA . Austrian Urogynecology Working Group. Tension-free vaginal tape operation: results of the Austrian registry. *Obstetrics and Gynecology* 2001, 98:732.

3. Madjar S, Tchetgen MB, Van Antwerp A, Abdelmalak J, Rackley RR. Urethral erosion of tension-free vaginal tape. *Urology* 2002, 59:601.

4. Romanzi LJ, Groutz A, Blaivas JG. Urethral diverticulum in women: diverse presentations resulting in diagnostic delay and mismanagement. *J Urol* 2000, 164:428.

5. Ramsay I. Urogynecology as a subspeciality. Invitational lecture presented at the 2nd International Congress of the Egyptian Society of Uro-Gynecology and Pelvic Floor Studies, Cairo, February 27-28, 2003. Abstract Book p. 3.

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