Surgical management of urogenital fistulae: Prospective study

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Abstract

The prpose of this study is to report the patient demographics surgical technique and outcome of urogenital fistulae repaired at our center. From January 2010 to April 2013, we received nine consecutive patients complaining of urine incontinence after surgery for obstructed labor. All were evaluated by history, physical examination, intravenous urography, cystoscopy and speculum examination. All patients underwent surgical repair of the fistula(e) and followed up 3, 6 and 12 months postoperative. Nine females aged 22-35 (mean 28) years with urogenital fistulae underwent open repair. The fistulae were vesicovaginal in seven and ureterovaginal in two. The surgical approach was transperitoneal in four, extraperitoneal in three and transvaginal in two patients.
The average hospital stay was nine days rang (5-14) all patient were cured from incontinence except one patient with missed second fistula not discovered until post operative period. At follow up all cured patients remained dry with good bladder capacity. In conclusion with comprehensive knowledge and adherence to basic surgical technique, high cure rate of urogenital fistulae could be achieved in relatively low volume centers.

Key words: Urogenital fistula, VVF, inconteinence.

Introduction

Urogenital fistula (UGF) has affected women for ages, Ibne Sina (AD1037-980 known as Avicenna) was one of the first authors who describes post partum fistula(3). This devastating complication of obstetric and surgical trauma to the genitourinary tract has serious consequences on both physical and psychological health .
Prevention and management of UGF depends on proper knowledge of predisposing factors, good obstetric care, meticulous surgical care and adherence to established surgical technique.
Surgical management of UGF is major challenge to the surgeon who deal with this difficult task specially in the beginning of his/her experience. in this study we are reporting our initial experience in managing UGF by describing the patient demographics, anatomical characteristics and surgical technique of UGF treated by our group.

Method

We prospectively followed all UGF patients referred for management in the period from January 2010 to April 2013. All patients were evaluated by history including surgical and obstetric history, physical examination including vaginal exam., intravenous urography (IVU) to evaluate the upper tract and cystoscopy.
All participants have given their written consent to use their data for research purpose and the research protocol has been approved by the Research and Ethical Committee of Faculty of Medicine and Health Sciences approval research code: FF-3-2010.
All patients underwent open surgical repair by one or more urologist and all intraoperative details of technique and complications were recorded. After discharge all patients were followed after 3months by history physical exam. and IVU. The second follow up visit was scheduled after six months where history and abdominal and pelvic ultrasound (US) was performed.

Result

A total of nine females aged between 22-35 (mean 28) years with vesicovaginal (VVF seven) or ureterovaginal (UVF two) fistulae managed by either transabdominal (seven patients) or transvaginal (two patients) approach (Table 1.) patients with UVF managed by direct extravesical reimplantation without antirefulx mechanism.

Transperitoneal approach was used in four VVF in which standard O'Connor's (6) bladder bisecting technique and separate two layers closure of the vagina and bladder after interposing local peritoneal flap with 3-0 Vicryl suture. One VVF managed by extra peritoneal transvesical approach, in two VVF transvaginal repair, with Martius labial fat flap interposed between the vagina and bladder.

A low lithotomy position was used in all VVF repairs so the vagina is accessible all the time to facilitate dissection from both the abdominal and vaginal side. The procedure started by cystoscopy after induction of general anesthesia and 6fr feeding tubes inserted in both ureteric orifices. These tubes help in protecting the ureter during dissection and kept indwelling to divert urine and brought out through the urethra and stitched to the labia so there is no need to pass it through the bladder and abdominal wall.

A fistula consideredif as complex if it is (4 cm or greater in diameter, if it involves the ureter or more than one fistula found)

two patients has their fistulae involving the right ureteric orifice which was managed by uerter reimplantation at same same procedure, in another two patients there was more than fistula present.

No major intra or post operative complication was encountered, tow patient recived blood transfusion due to moderate blood loss, operative time ranged from 1.5-4 (mean 2.4) hours and hospital stay ranged from 5-14 (mean 9) days.

At the time of discharge all patients were dry except one which have cystoscopy performed after two weeks and showed missed second fistula. IVU performed after three months(Fig1&2) of surgery shows good bladder capacity, no fistula and no hydronephrosis in all except one patient which was lost to follow up , patients who underwent ureter reimplantation had abdominal ultrasound examination performed at 6 and 12 months and all had no hydronephrosis .

Discussion

Obstetric complications remain the leading cause of UGF in developing countries(2)(4). while gynecologic surgery is the main cause in developed countries (7). In our series all patients had surgery for obstetric complications prior to the development of UGF which make a difficulty in attributing the fistulae to either the birth complications or to surgery.

Most of our patients are resident of rural areas with high prevalence of illiteracy, poverty and lack of proper obstetric care leading to high incidence of obstetric complications and improper management.

The timing of repair of UGF remains controversial traditionally the attempt to repair is delayed for three to six months to allow inflammation and infection to resolve, Waaldijk has reported excellent result of early repair of obstetric fistula in 1451 patients(8).

Recently with increasing trends towards use of minimally invasive surgical technique laparoscopic repair of UGF has been utilized by many surgeons with good results (1)(5).

The complexity of the UGF and experience of the surgical team determines the outcome of surgical management of UGF, but with thorough knowledge and meticulous adherence to the basic surgical technique we had achieved successful surgical repair of all except one of our patients despite the limited experience we have in dealing with UGF.

Putting the patient in combined abdominoperineal (low lithotomy) position provides the opportunity to operate on both abdominal and vaginal side and facilitates difficult dissection by using finger in the vagina during abdominal approach. Another trick that we found useful

and to our knowledge not described before is the insertion of 6Fr feeding tubes into the ureters during cystoscopy after anesthesia this will spare time and facilitates dissection of fistula close to the ureteric orifice and further more will eliminate the need to pass the tubes through the bladder and abdominal wall by passing them through the urethra instead.

Conclusion

The comprehensive knowledge and adherence to basic surgical steps and meticulous technique is the key of success in dealing with UGF leading to high cure rate in a centres with relatively little experience and low flow of cases.

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Table 1. Detailed description of patients' pre, intra and post-operative data

AGE	SITE	No	SIZE	APPROACH	BLOOD TRANSFUSION	HOSPITAL STAY	RESULT	FOLLOW UP
35	BASE	1	30mm	Trans peritoneal	YES	7	DRY	CURED
22	BASE	1	40mm	Trans peritoneal	NO	7	DRY	CURED
25	BASE + POST WALL	2	20mm + 5mm	Trans peritoneal	YES	10	DRY	CURED
30	BASE	1	20mm	trans vaginal	NO	7	DRY	CURED
29	POST WALL	1	25mm	Transvesical	NO	12	DRY	CURED
25	URETERO VAGINAL	1		extra peritoneal	NO	7	DRY	CURED
25	URETERO VAGINAL	1		extra peritoneal	NO	5	DRY	CURED
35	TRIGON	1	15mm	trans vaginal	NO	14	DRY	CURED
30	TRIGON + POST WALL	2	25mm + 5mm	Trans peritoneal	NO	14	INCONTINENT	LOST

AGE	SITE	No	SIZE	APPROACH	BLOOD TRANSFUSION	HOSPITAL STAY	RESULT	FOLLOW UP
35	BASE	1	30mm	Trans peritoneal	YES	7	DRY	CURED
22	BASE	1	40mm	Trans peritoneal	NO	7	DRY	CURED
25	BASE + POST WALL	2	20mm + 5mm	Trans peritoneal	YES	10	DRY	CURED
30	BASE	1	20mm	trans vaginal	NO	7	DRY	CURED
29	POST WALL	1	25mm	Transvesical	NO	12	DRY	CURED
25	URETERO VAGINAL	1		extra peritoneal	NO	7	DRY	CURED
25	URETERO VAGINAL	1		extra peritoneal	NO	5	DRY	CURED
35	TRIGON	1	15mm	trans vaginal	NO	14	DRY	CURED
30	TRIGON + POST WALL	2	25mm + 5mm	Trans peritoneal	NO	14	INCONTINENT	LOST

Fig 1. IVU of a patient with VVF and right ureter ligation

Fig 2. Same patient in fig 1. 3 months after VVF repair with reimplantation of right ureter

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التدبير الجراحي للنواسير البولية التناسلية: دراسة استشرافية

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الملخص

تهدف الدراسة الآتية لتوثيق التركيبة الديموغرافية والتقنية الجراحية والنتائج لحالات الناسور البولي التناسلي التي تم إصلاحها في مركزنا. من يناير 2010 م إلى إبريل 2013م تلقينا تسع مرضى متوالين يشكون من سلس البول بعد عملية جراحية لتعسر الولادة. تم تقييمهم بالتاريخ المرضي والفحص البدني، تصوير الجهاز البولي عن طريق الوريد، تنظير المثانة والفحص المهبلي بالمنظار. خضع جميع المرضى لإصلاح جراحي للناسور وتم متابعتهم لمدة 3-12 شهر بعد العملية الجراحية. خضع تسع إناث تتراوح أعمارهم بين 22-35 (متوسط 28) عاماً لعملية إصلاح مفتوحة للناسور البولي التناسلي. في سبع من الحالات كان الناسور مثاني مهبلي وحالبي مهبلي في اثنتين. كان النهج الجراحي بطريق الصفاق في أربعة خارج الصفاق في ثلاث وبطريق المهبل في اثنتين من المرضى. بلغ متوسط الإقامة في المستشفى تسعة أيام (5-14) تم شفاء جميع المرضى من سلس البول إلا مريضة واحدة لديها ناسور آخر لم تكتشف حتى فترة ما بعد الجراحة. عند المتابعة بقي كل المرضى الذين شفوا جافين مع سعة جيدة للمثانة. مع المعرفة الشاملة والتقيد بالتقنية الجراحية الأساسية يمكن أن تتحقق نسبة شفاء عالية من الناسور البولي التناسلي في مراكز ذو حجم منخفضة نسبياً.

الكلمات المفتاحية: الناسور البولي التناسلي، الناسور المثاني المهبلي، سلس البول.