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## **Short Communication**

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### **Genital Tract Fistulae in the Republic of Yemen, Sana'a**

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**Abstract:** The purpose of this study was to investigate the type, frequency, causes and treatment outcome of patients with GTF at Republic of Yemen, Sana'a. A survey of 55 cases of GTF in Sana'a, the capital of Yemen over the past 8 years was carried out through retrospective study from three big hospitals (from January, 1997 to December, 2004). The cases were analyzed with respect to the causes, the type, the mode of management and the clinical outcome of the genital tract fistula. GTF is more common in Republic of Yemen. Most of GTF are related to obstructed labor due to unattended deliveries, small pelvic dimensions, mal-presentation, poor uterine contractions and cephalo-pelvic disproportion. Total 98 cases were collected from three big hospitals in Sana'a over the past 8 years, 43 cases were excluded (without sufficient data). In a series of 55 women with GTF, fistulas were related to obstetric events in 83.64%, gynecologic surgery in 10.91%, trauma in 1.82% and unknown cause in 3.64%. Of the 55 patients with GTF, 51 cases were urogenital fistulae (41 cases of vesico-vaginal fistulae, 10 cases of other types), 3 were recto-vaginal fistulae and one case had concomitant urogenital and recto-vaginal fistulae. Among the 55 cases of GTF, 51 patients had been undertaken surgical fistula repair and 4 patients without operations for systematic diseases. As a result, 30 of 51 cases were successfully repaired at first surgery. All 21 cases were performed second-step repairs, 11 cases were completely cured and 10 cases were failed finally, Total 80.4% of success rate was achieved. In addition, the stress urinary incontinence developed in 7.3% of cases. Obstructed labor remains the most important cause of GTF in Yemen. It is important to prevent GTF arising from obstructive causes. The surgical treatment of genitourinary fistulae will depend upon the type, size and location of fistula. It is acceptable to repeat the repair surgery through a vaginal approach even after the first vaginal approach failure.

**Key words:** Genital tract fistula, female, treatment

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**INTRODUCTION**

Genital Tract Fistula (GTF) is a common problem in our socioeconomic setup, especially the type of vesico-vaginal fistula. Obstructed labor remains the most important cause of vesico-vaginal fistulae in developing countries (over 90%) (Hilton, 2003; Wall *et al.*, 2005), poor antenatal care, neglected prolonged labor, usually conducted by an untrained birth attendants and reduced pelvic dimensions (caused by early childbearing) are the most common causes. The affected women are usually condemned to live with the diseases in their early reproductive life (Hilton, 2003; Wall *et al.*, 2005; Wall *et al.*, 2004; Lee *et al.*, 1998; Chaudhry, 1995). Due to the prolonged compression of the bladder and vagina between the head and pubis in cases of obstructed labor, this leads to ischaemia, pressure necrosis and the necrotic area will slough and causing urine, feces or both to leak for the rest of the life, unless surgical repair is done successfully. Poverty, lack of knowledge, cultural beliefs and values, isolation and unreliable public transportation and no direct methods of communication between villages, rural health centers and district hospital contribution to delay in cases of emergency (Muleta, 2004).

However, the actual incidence of GTF is not well documented in Republic of Yemen. In order to investigate the frequency and characters of GTF in Sana'a, the capital of Yemen, we carried out a retrospective study from three big hospitals in Sana'a, the capital of Yemen (from January, 1997 to December, 2004). Total 55 cases were analyzed with respect to the causes, the type, the mode of management and the clinical outcome of patients with genitourinary and rectovaginal fistulae.

**MATERIALS AND METHODS**

A retrospective review of charts and operating room records of patients admitted for genitourinary and/or rectovaginal fistula to the gynecological ward of the enrolled hospitals from January 1997 to December 2004 was conducted. The enrolled hospitals included Yemen, Sana'a, Al-Kuwait university hospital, Al-Sabeen hospital and Al-Gumhory educational hospital. There were total around 962000 deliveries in the same period of time. Total 98 patients with GTF admitted to these three hospitals, 55 cases were involved in this study and 43 cases were excluded (data not enough).

All 55 cases were analyzed with respect to the causes, the type, the mode of management and the clinical outcome of patients with genitourinary and rectovaginal

fistulae. Their average age is 32 years old (range from 16 to 45). Among them, all patients had vaginal delivery and no one had cesarean section history.

**RESULTS**

Obstructed labor remains the most important cause of GTF in Yemen. The prevalence of obstetric urogenital fistula is 101.89 per 100000 births (data collected from three above hospitals). GTF are more common in Republic of Yemen. Most of GTF are related to obstructed labor due to unattended deliveries, small pelvic dimensions, mal-presentation, poor uterine contractions and cephalo-pelvic disproportion.

Obstructed labor is main cause, count for 83.64% (n = 46), following by surgical cause (n = 6, 10.91%), trauma (n = 1, 1.82%) and unknown reason (n = 2, 3.64%). (Table 1).

Vesico-vaginal fistulae count for 76.36% (42 cases), urethro-vaginal fistulae, uretero-vaginal fistulae, vesico-cervical fistulae, vesico-uterine fistulae, vesico-vaginal stump fistulae, recto-vaginal fistula and combined GTF count for 5.45, 1.82, 3.64, 1.82, 3.64, 5.45 and 3.64%, respectively (Table 2). The combined GTF included one case of vesico-vaginal fistula combined with uretero-vaginal fistula and one case of vesico-vaginal fistula combined with recto-vaginal fistula.

Of 55 GTF patients, 51 patients have performed surgical repairs. As a result, 30 of 51 cases were successfully repaired at first surgery and the complete success rate is 58.8% at the first surgical step. Twenty-one cases failed during first surgery had been undertaken the second operation and successful repair occurred in 10 women. Total 80.4% of success rate was achieved. In addition, 4 cases did not take surgical treatment for some reasons (one with rheumatic heart disease, one complicated with ovarian cancer with metastasis and massive adhesion, two unknown).

Table 1: Causes of genital tract fistulae

Causes	Cases (n)	Prevalence (%)
Obstructed labour	46	83.64
Surgical cause	6	10.91
Trauma	1	1.82
Unknown cause	2	3.64

Table 2: Types of genital tract fistulae

Types	Cases (n)	Prevalence (%)
Vesico-vaginal fistulae	41	74.55
Urethro-vaginal fistulae	3	5.45
Uretero-vaginal fistulae	1	1.82
Vesico-cervical fistulae	2	3.64
Vesico-uterine fistulae	1	1.82
Vesico-vaginal stump fistulae	2	3.64
Recto-vaginal fistulae	3	5.45
Combined GTF	2	3.64

We have consulted all patients with their urogynecologic symptoms. The stress urinary incontinence developed in 4 cases (7.3%), especially in vesico-vaginal fistula patients. The incontinence signs occurred at average period of 2 to 6 months after delivery. However, the stress urinary incontinence did not released in 3 of cases after surgery.

## DISCUSSION

Genital tract fistula remains a major public health concern in developing countries, worldwide incidence of up to 500,000 cases annually. Over 80% of cases result from neglected obstructed labour (Hilton, 2003; Wall *et al.*, 2005). Our results keep consistent with the previous reports which obstructed labor remains the most important cause of GTF in Yemen. It is important to prevent GTF arising from obstructive causes. The surgical treatment of genitourinary fistulae will depend upon the type, size and location of fistula. It is acceptable to repeat the repair surgery through a vaginal approach even after the first vaginal approach failure. Although repeat operations are certainly justified, the success rate decreases progressively with increasing numbers of previous unsuccessful procedure.

Obstetric urogenital fistula could be prevented by series of interferences, including improving socio-economic condition of the pregnant women, educating the patients to utilize health facilities and advice against teenage pregnancy. Labor should be supervised by trained health personnel and difficult labor referred early to appropriate health care facility.

Except obstetric reasons, previous report showed that the risk of developing vesicovaginal fistula is more than 1% occurred following radical surgery with adjuvant radiotherapy for gynecologic malignancies (Angioli *et al.*, 2003). Fistulas in radiated patients are less frequently repaired and the success rate varies between 40 and 100%. Because the cases of radical surgery and radiotherapy were limited in present hospitals, so the related data was not recorded in this study.

Surgical repair is the common method to treat genital tract fistula (Hanif *et al.*, 2005). It is most important to perform such repair surgery at appropriate period after fistula present. Vesicovaginal fistula repair could be performed by both trans-vaginal and trans-vesico pathway (Chaudhry, 1995; Hanif *et al.*, 2005; Cardias and Colau, 2004). Present data indicated that the first surgery success rate is only 58.8%. It is not only related with the size and position of fistula, infectious, the condition of patients, the delayed treatment, as well as surgical skills and experience of surgeons. Despite the many

controversies surrounding the proper surgical repair of vesico-vaginal fistulas, the classical methods available allow surgeons to select the procedure best suited for each patient. It is important to recognize that each fistula is unique, surgeons will often be required to individually vary their approach and technique. Regardless of whether a trans-abdominal or trans-vaginal approach is selected, the concepts of using healthy tissue in tension-free closures and reinforcing the closures in high-risk situations will ensure success nearly all of the time. A urinary diversion should be considered in the rare situation where the fistula has failed even the most technically sound repair (Huang, 2002).

Although laparoscopic surgery has been conducted in many field of gynecologic operations, however, it is not popular in our society. Most of patients could not afford the cost of such expensive surgery if there is no support from government in our country. Recent data suggested that laparoscopic vesico-vaginal fistula repair is feasible and may result in lower morbidity, shorter hospital stay and quicker recovery than the trans-abdominal or trans-vaginal approaches (Ou *et al.*, 2004; Ravi *et al.*, 2003).

Urinary incontinence has been reported following delayed fistula repair (Murray *et al.*, 2002). We found that the stress urinary incontinence developed in 4 cases (7.3%), especially in the patients with vesico-vaginal fistula. However, the symptoms of stress urinary incontinence not released in most of cases after repair surgery. The problem of persistent urinary incontinence following closure is due to the complex pelvic dysfunction. Tension-free vaginal tape following fistula closure would be best choice for those patients.

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