

**DIFFERENT SURGICAL TECHNIQUES IN MANAGEMENT
OF VESICOVAGINAL FISTULA**

Essay

**Submitted for Partial Fulfillment of
Master Degree in Urology**

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2010**

Acknowledgement

First and foremost, I submit all my gratitude to ALLAH to whom I owe every success in my life.

I would like to express my sincere appreciations and profound gratitude to Prof. Dr. Shereen Ragy, Professor of Urology, Faculty of Medicine – Ain Shams University, for his help, kind guidance, continuous support & giving me such an honour to work under his supervision.

I would like to express my respect, appreciation, and thanks for Dr. Mohamed Wael Safa, Lecturer of Urology, Faculty of Medicine – Ain Shams University, for his assistance and encouragement

LIST OF ABBREVIATIONS

DJ	: Double J
HRT/ERT	:Hormone replacement therapy/estrogen replacement therapy
IVP	: intravenous pyelography
IVU	: intravenous urethrography
PICC	: Peripherally inserted central catheter
PID	: Pelvic inflammatory disease
RAM	: Rectus abdominis muscle
TUSC	:Transurethral suture cystorrhaphy
UGF	: Urogenital fistula
USa	: United States of America
VVF	: Vesicovaginal fistula
WHO	: The World Health Organization

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Acknowledgement

First and foremost, I submit all my gratitude to ALLAH to whom I owe every success in my life.

I would like to express my respect, appreciation, and thanks for Prof. Dr. EL SAYED MOHAMMED MOUSA Head and Professor of Urology Departement, Faculty of Medicine – El Azhar University and Prof. Dr. Mohammed Amin El Baz Professor of Urology, Faculty of Medicine – Ain Shams University for their time and accepting discussion of this essay.

I would like to express my sincere appreciations and profound gratitude to Prof. Dr. Shereen Ragy, Professor of Urology, Faculty of Medicine – Ain Shams University, for his help, kind guidance, continuous support & giving me such an honour to work under his supervision.

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INTRODUCTION

Vesicovaginal (VVF) is the most common genitourinary fistula, This condition in which there is an abnormal connection between the bladder and the vagina has far reaching social implications on the patients, due to constant dribbling of urine causing wetting of clothes, the accompanying smell and the constant humiliation and destitution (*Obi et al., 2008*).

This condition has plagued women with obstructed labor and traumatic delivery for thousands of years. The first recorded references of vesicovaginal fistulae were made in 1550 BC in ancient Egypt. Avicenna, a renowned Arabo-Persian physician, was the first person to document the relationship between vesicovaginal fistulae and obstructed labor in 1037 AD (*Zacharian, 2000*).

On account of obstetric and gynecologic risk factors. Obstetric risk factors include obstructed labour due to unattended deliveries, small pelvic dimensions, mal-presentations, poor uterine contraction and introital stenosis. Gynecologic risk factors include hysterectomy, extensive dissection between bladder and vagina, unrecognised bladder laceration, inappropriate stitch placement, and/or devascularisation injury to the tissues. The most common location of VVF after hysterectomy is at the vaginal cuff and the supratrigonal area on the posterior wall of the bladder, as

this is the usual site of bladder injury during surgery (*Eilber et al., 2003*).

VVF that develops after obstructed labour usually involves the bladder base, trigone and urethra (*Vyas et al., 2005*). VVFs are classified as simple and complicated. simple fistulae as small-sized fistulae, i.e. less than 1 cm in diameter, and medium-sized fistulae, i.e. 1–3 cm in size complicated fistulae are fistulae of large size (greater than or equal to 3 cm in diameter); those recurring after prior attempts at closure; those associated with a history of prior radiation therapy or with malignancy; those occurring in a compromised operative field owing to poor healing or host characteristics and those involving the trigone, bladder neck and/or urethra (*Dmochowski, 2002*).

The most common causes of VVF differ in different parts of the world. In industrialized countries, the most common cause (75%) is injury to the bladder at gynecologic surgery, usually abdominal hysterectomy, with the remainder due to vaginal hysterectomy or anti-incontinence surgery, such as anterior colporrhaphy (*Khan et al., 2005*).

In developing countries, in which routine prenatal obstetric care may be limited, VVFs most commonly occur as a result of prolonged labor, with resulting pressure necrosis to the anterior vaginal wall and underlying trigone of the bladder from the baby's head. VVF can also result from the use of forceps.

Post-hysterectomy VVF can result from an unrecognized incidental cystotomy or as a result of tissue necrosis from a suture placed through both the bladder and vaginal wall during closure of the vaginal cuff (*Shelbaia and Hashish 2007*).

The World Health Organization (WHO) estimates that at least two million girls and women currently live with fistula and that an additional 50,000 to 100,000 are affected each year (*Murray and Lopez, 2003*).

No medical therapy is available that corrects vesicovaginal fistulae. However, conjugated estrogen (oral or transvaginal) helps vaginal tissues become softer and more pliable for upcoming fistula repair. This is especially important for postmenopausal women and women with atrophic vaginitis. For personal hygiene and skin care, sitz baths with a solution of permanganate or baking soda douches may be helpful. For a small fistula, an initial trial of urethral catheter drainage may be attempted for 4-6 weeks. However, catheter drainage or fulguration of the edges of the fistula tract rarely results in cure (*Evans et al., 2003*).

VVF repair is traditionally accomplished with procedures using vaginal or abdominal approaches. Controversy exists, however, about the type and timing of procedures, and the need for local flaps for additional support of the repair (*Eilber et al., 2003*).

With the advent of laparoscopy for VVF repair and recent robot-assisted procedures, the surgical approach may be further questioned. Additionally, with the introduction of new hemostatic agents over the past 5 years, more options may become available for endoscopic and open surgical repair. This ESSAY reviews the current techniques for VVF repair and suggests approaches for improved cure rates (*Brian and Angelo, 2007*).

AIM OF THE WORK

A review of literature on female patients complaining of vesicovaginal fistula to elaborate etiology, surgical principles and outcome of repair and the techniques developed for their repair.

HISTORICAL REVIEW

The Ebers Papyrus represents the first documented medical reference to vesicovaginal fistula (VVF). In 1935, Derry found a VVF in the mummified remains of Egyptian Queen Henherit (11th Dynasty, 2050 B.C.) (*Dmochowski, 2002*).

The term fistula (previously called ruptura) was not used until 1597, when Luiz de Mercado first coined the term. Early attempts for correction merely endeavored to soak up the urine with a variety of methods, but in 1663 Hendrik Van Roonhuyse of Amsterdam published what was probably the first text on operative gynecology wherein the following innovations were proposed: (i) proper exposure of the fistula with a speculum; (ii) proper exposure of the bladder wall; and (iii) approximation of the denuded edges by means of 'stitching needles' (*Huang, 2002*).

In 1675 the Swiss physician Johann Fatio successfully closed two fistulas using the van Roonhuyse technique and in 1766 Levret was first to propose use of the knee–chest position both to view and operate upon the fistula. Henry Levert of Mobile, Alabama was the first to suggest the use of metal sutures in 1829; and in 1834 Montague Gosset of London first had success using metal sutures. In 1836 Peter Mettauer of Virginia was first to close a fistula in the US (*Wall, 2005*).
