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كليـــــة الطـــــب
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Enterovesical Fistulae: Etiology, Diagnosis and Treatment

An essay

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List of Abbreviation

Abbreviation	The full term
CT	Computerised tomography
3 D	3-dimensional
EVF	Enterovesical fistula
GAIN	Gauging Adalimumab Efficacy in Infliximab Nonresponders
MRI	Magnetic Resonance Imaging
OTSC	Over-The-Scope-Clip
PDAI	Perianal Disease Activity Index
SEMS	Self-expanding metal stents
UTIs	Urinary tract infections

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Introduction

Normally, the urinary system is completely separated from the alimentary canal.

Enterovesical fistula (EVF) is an abnormal communication between the intestine and the bladder ***(Golabek et al., 2013).***

Connections may result from (1) incomplete separation of the two systems during embryonic development (eg, failure of the urorectal septum to divide the common cloaca), (2) infection, (3) inflammatory conditions, (4) cancer, (5) trauma or foreign body, or (6) iatrogenic causes (presenting either postoperatively or as a treatment complication) ***(Scozzari et al., 2010).***

Based on the bowel segment involved, it can be divided into four main categories: colovesical (the commonest form, usually between sigmoid colon and bladder dome), rectovesical, ileovesical and appendicovesical (accounting for less than 5% of cases) ***(Golabek et al., 2013).***

The diagnosis of EVF can be challenging and is often delayed for several months after symptoms begin ***(Solkar et al., 2005).***

Diagnostic tools include laboratory tests, imaging studies and endoscopic procedures. Although conservative management can be attempted in selected patients, in most cases, the treatment is mainly based on surgical interventions. Recently, the laparoscopic approach to EVF has been shown to be safe and effective. Although it is a rare condition in a general surgery setting, EVF is a challenging condition leading to high morbidity and mortality rates ***(Kavanagh et al., 2003)***.

In this study we will focus on the more common causes, presentations, and treatments of enterovesical fistulae.

Aim of the Work

The aim of this essay is to overview the different etiologic factors of EVF with special concern on the diagnostic modalities and treatment options.

Etiology

A fistula is an abnormal communication between two epithelialized surfaces. Vesicoenteric fistulae, also known as enterovesical or intestinovesical fistulae, occur between the bowel and the bladder ***(Scozzari et al., 2010).***

Fistula may be either congenital or acquired (eg, inflammatory, traumatic, surgical, neoplastic). Congenital EVF are rare and are often associated with an imperforate anus ***(Gray et al., 2004).***

Congenital (developmental) EVF occurs as a result of incomplete separation between urinary system and the alimentary canal during embryonic development (failure of the urorectal septum to divide the common cloaca) ***(Dawam et al., 2004).***

EVF can be divided into 4 primary categories based on the bowel segment involved, as follows: (1) colovesical, (2) rectovesical (including rectourethral), (3) ileovesical, and (4) appendicovesical fistulae **Fig. (1).**

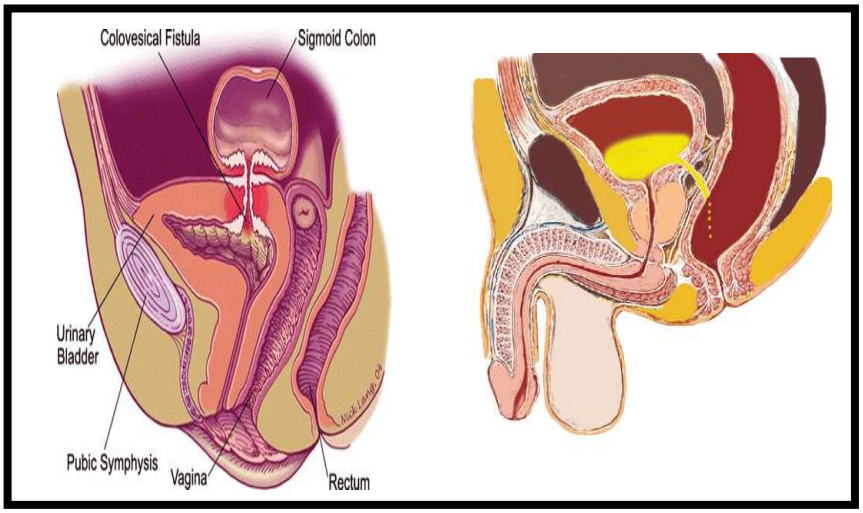

Fig. (1): Colovesical and rectovesical fistulae ***(Scozzari et al., 2010)***

Colovesical fistula is the most common form of enterovesical fistula and is most commonly located between the sigmoid colon and the dome of the bladder ***(Scozzari et al., 2010).***

Rectourethral and rectovesical fistulae are observed in the postoperative setting, such as after prostatectomy, as a consequence of chronic infection or tissue destruction that accompanies massive decubiti, or in the setting of acute infections such as Fournier gangrene ***(Cakmak and Aaronson, 2007).***

Epidemiology:

Frequency:

Colovesical fistulae are the most common type of fistulous communication between the urinary bladder and the bowel. The relative frequency of colovesical fistulae is difficult to ascertain because of the numerous potential etiologies, including multiple disease processes and surgical procedures ***(Garcea et al., 2006)***.

The incidence of fistulae in patients with diverticular disease, the most common cause of colovesical fistula, is accepted to be 2%, although some referral centers have reported higher percentages. Only 0.6% of carcinomas of the colon lead to fistula formation - Colovesical fistulae are more common in males, with a male-to-female ratio of 3:1. The lower incidence in females is thought to be due to interposition of the uterus and adnexa between the bladder and the colon. In women, other types of fistulae (typically iatrogenic, such as enterovaginal, ureterovaginal, and vesicovaginal) are more common than colovesical fistulae. Women who present with colovesical fistulae are commonly older and/or have a history of hysterectomy. Uterine atrophy or absence may be predisposing etiologies ***(Charúa et al., 2007).***