NEW TRENDS IN MANAGEMENT OF GENITAL PROLAPSE

ESSAY

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ABSTRACT

The International Continence Society defined pelvic organ prolapse as the descent of one or more of vaginal segments: the anterior, the posterior, the apex (cervix) or the vault (cuff) after hysterectomy.

Pelvic organ prolapse etiology is multifactorial. The POP-Q is now the only widely accepted to quantify POP objectively.

Uterovaginal prolapse treatment is vaginal hysterectomy and repair. Post-hysterectomy prolapse treatment is sacro-colpopexy (abdominal or laparoscopic). Prosthetic materials have been used to reduce the high recurrence rates as midvaginal sling or total vaginal mesh.

Keywords:

{Prolapse - support - vaginal vault - prosthetic materials - pessary - sling -mesh}

Contents

List of Abbreviation

ALA	Anterior aspect of levator ani
ATFP	Arcus tendineus fasciae pelvis
ATLA	Arcus tendineus levator ani
AUGS	The American Urogyneocologic Society
ePTFE	Expanded polytetrafluoroethylene
ICS	The International Continence Society
IVS	The intravaginal slingoplasty
LVGS	Lateral vaginal grooves
PNTML	Pudendal nerve terminal motor latency
POP	Pelvic organ prolapse
POP-Q	Pelvic organ prolapse Quantitation System
SFLA	Superior fascia of levator ani
SGS	The Society of Gyneocologic Surgeons
SUI	Stress urinary incontinence
SUSS	Sacrospinous-uterine suspension
TVL	Total vaginal length
TVM	Total vaginal mesh
UTI	Urinary tract infection
VLC	Veronikis Ligature Carrier

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INTRODUCTION

Pelvic organ prolapse (POP) is the downward displacement of the structures that are normally located adjacent to the vaginal vault. Because these displacements are each associated with a defect in support structures, they may each be considered hernias. ***(Carl, 2003).***

Pelvic organ prolapse is common; up to 50% of parous women have some degree of genital prolapse. ***(Beck and Nordstrom, 1991).*** Anterior vaginal wall prolapse is the most common type of prolapse. ***(Hendrix et a1., 2002).***

Repair of pelvic organ prolapse accounts for about 60% of major gynecologic surgery ***(Thompson, 1997).*** When pelvic reconstructive surgery is performed, three specific goals must be accomplished:

1- Correction of all anatomical defects, thus restoring anatomy.

2- Maintenance or restoration of normal bladder function.

3-Maintenance of vaginal capacity for sexual function. ***(Paraiso et al., 1996).***

The first line of treatment is surgical repair. The risk of having an operation for prolapse may be 11% and almost one-third of cases require re-operation. ***(Olsen et al., 1997).*** Many different operations have been proposed. However, long-term follow up reports on prolapse surgery are scarce and the rate of recurrence of anterior and posterior wall defects can range from 25% to 37% regardless of the technique or

the approach used. ***(Shull et al., 1994; Paraiso et al., 1996; Kahn and Stanton, 1997 and Porter et al., 1999).***

Considering pelvic organ descent as a hernia through the genital hiatus, prosthetic material has been advocated in gynecology deriving from its use in general surgery for hernia repair, as a reinforcement or replacement of natural structure. ***(Milani et al., 2005).***

The use of synthetic meshes is becoming increasingly common to optimize surgical outcome and to reduce recurrence rate. ***(Iglesia et al., 1997; Cervigni and Natale, 2001; Debodinance et al., 2002 and Birch and Fynes, 2002).***

The implanted mesh provides mechanical support during the strengthening of the fascia tissue. It allows the development of new connective tissue, which is deficient in genital prolapse. ***(Cervigni and Natale, 2001; Birch and Fynes, 2002 and Cosson et al., 2003).***

Different prosthetic materials have been used in Gynecological surgery, such as: polyethylene tetraphthalate (mersilene), expanded polytetrafluoroethylene (ePTFE, or Gore-tex), polypropylene mesh (prolene). The last is usually preferred due to its highly elastic properties and a low risk of infection. ***(Milani et al., 2005).***

AIM OF WORK

The aim of this study was to review the new tools in the management of pelvic organ prolapse and the recent developments in the surgical management of pelvic organ prolapse.

HISTORICAL BACKGROUND

Disorders of the pelvic floor have been recorded for over 4000 years; 2000 years before the birth of Christ the Egyptians clearly described uterine prolapse in the Kahum and Erebus papyri. ***(Emge and Durfee, 1996).***

Cleopatra proposed the application of astringent lotions to the vagina in cases of vaginal prolapse. Hippocrates used succession, in which the patient was suspended upside-down from a ladder and shaken, for the treatment of irreducible uterine prolapse. Descriptions of various lotions, pessaries and massage continue throughout the historical literature. In 1603, R de-Castro suggested attacking it with a piece of red hot iron, as if to bund it, where upon fright will force the prolapsed part to recede into the vagina. ***(Bidmead and Cardazo, 1998).***

The mechanism of urogenital prolapse and normal pelvic floor function is poorly understood, although the effects of difficult delivery and heavy exertion have been widely blamed. However, the occurrence of urogenital prolapse in virgins and nulliparae is well recorded. The first description of the ligaments of the uterus like the sails of a boat (presumably the broad ligaments) is accredited to Aretus around 300 AD. ***(Emge and Durfee, 1996).***

From the 16th to the 19th centuries various mechanisms for urogenital support were proposed, including vaginal rigidity, perineal

support and the broad and round ligaments of the uterus.

It was not until this century that the role of the cardinal and uterosacral ligament complex in supporting the uterus was recognize by ***Donald 1908 and Fothergill 1915.***

More recently, understanding of the supportive mechanism of the bladder and of pelvic floor function has improved, but despite these advances in the last 4000 years, there are many aspects which remain to be clarified. ***(Bidmead and Cardazo, 1998).***

ANATOMY OF PELVIC FLOOR SUPPORT

A dynamic coordination system maintains the integrity of the pelvic floor. Normal control of the pelvic floor develops through learned behavior to provide for storage and evacuation in the bladder and anorectum. Because of the high prevalence of disorders of urinary incontinence, anal incontinence, pelvic organ prolapse, and combined pelvic support disorders in women, an understanding of the complex anatomy responsible for maintaining normal support is important. ***(Olsen et al., 1997).***

STRUCTURE OF PELVIC FLOOR:

The pelvic floor is a complex of muscles, ligaments, and fascia that form a multilayered structure in the inferior pelvis. The pelvic floor consists of all the tissues between the pelvic peritoneum and the perineum, the visceral fascia and pelvic diaphragm, and the urogenital and anal triangles. ***(Wallace, 1994).***

A. Pelvic Floor Musculature

B. Perineal Body

C. Endopelvic Fascia

A. Pelvic Floor Musculature:

I - Pelvic diaphragm:

The pelvic diaphragm is made up of bilaterally paired group of three striated muscles the pubococcygeus (to include the puborectalis), the iliococcygeus, and the coccygeus.

The pubococcygeus and iliococcygeus muscle arise from the posterior surface of the superior ramus of the pubis, from a thickened band of obturator fascia that extends from the pubic ramus to the ischial spine, called the arcus tendineus, levator ani, and from the ischial spines. These muscles then insert into the anococcygeal raphe, the sphincter ani, and the lowest segment of the coccyx. The levator ani (pubococcygeus and iliococcygeus muscles) separate anteriorly to form the levator hiatus. Through it passes, anteriorly to posteriorly, the urethra, vagina, and rectum. The coccygeus muscles arise from the ischial spines and sacrospinous ligaments bilaterally and insert into the sides of the lowest part of the sacrum and coccyx. Usually, the pelvic diaphragm assumes the shape of a shallow basin with the levator hiatus located on the anterior slope of the basin. Posterior to the rectum, the paired muscles of the pelvic diaphragm join in the midline to form the levator plate. This portion of the pelvic diaphragm acts much like a trampoline receiving and resisting sudden increases in intra abdominal pressure. ***(Gill and Hurt, 1998).***