Vaginal Septum in Adolescents: Clinical Implications

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Introduction

Vaginal septum anomalies may consist in either longitudinal or transverse fusion and canalization disorders. Longitudinal vaginal septums (Figure 1) are usually the result of an incomplete fading of the divider between the fused Mullerian ducts at their distal ends. A complete obstructing hemi-vagina by a longitudinal vaginal septum may be associated with uterine abnormality and ipsilateral renal agenesis [1].

Transverse vaginal septums (Figure 2) are rare and often unnoticed congenital abnormality typically not diagnosed until adolescence [2]. They are usually the result of a failed absorption of the tissue found in between the vaginal plate and the distal end of the merged Mullerian ducts [1]. Transverse vaginal septums may be found at any vaginal level (lower, middle or upper part) although the majority of such septa occur at the junction of the middle and upper thirds of the organ. It is most frequently less than 1 cm thick.

The hymen is the embryologic septum between the sino-vaginal bulbs above and the urogenital sinuses below. It is not derived from the Mullerian ducts. Total transverse fusion defects of the Mullerian ducts as well as hymenal malformations are not usually accompanied by uterine malformations [1].

Incidence

We ignore the exact incidence of these obstructive Mullerian anomalies although it is believed to be between 0.1% and 3.8%. Duplication of the uterus could be accompanying a longitudinal vaginal septum and a blind hemi-vagina in 15-30% of the cases.

Imperforate hymen incidence has been reported to be approximately 0.1%, and a transverse vaginal septum incidence has been published to be found 1 in 70,000 females, making this anomaly to be one of the rarest encountered in the female genital tract [3].

Presentation

Congenital obstructing anomalies of the vagina come across to different medical and surgical specialties at different times, during early childhood and/or adolescence. The most common presentations in newborns are an abdominal mass, a newborn sepsis or respiratory distress. In adolescent’s abdominal pain, voiding dysfunctions, and back pain are more common presentations [1].

Diagnosis

High degree of suspicious toward these rare malformations should lead to early diagnosis. Magnetic resonance imaging (MRI) has turn out to be a significant part of the assessment of suspected vaginal anomalies. Burgis concluded that MRI was the gold standard in diagnosis; however clinical examination and ultrasonography should be sufficient diagnostic procedures [4]. MRI will be needed in the unclear cases such as a high vaginal transverse septum [4].

Fertility Consequences

Obstructing vaginal malformations impede the outflow of menstrual blood flow and may cause hematocolpos, hematometra and hematosalpinx, thus increasing the likelihood of retrograde menstruation. Therefore an early diagnosis and prompt treatment of a vaginal obstruction might improve successful pregnancy by decreasing the risk of hematometra and/or hematosalpinx and the subsequent development of pelvic endometriosis. Dysfunctional uterine bleeding, dyspareunia and dysmenorrhea are the most common complaints during the follow-up [5]. Moreover endometriosis and infertility are the most noticeable late consequences described with vaginal obstruction.

The likelihood of endometriosis and infertility have been claimed to occur earlier in cases of a high transverse vaginal septum. The presence of an imperforate hymen does not interfere with infertility and has showed a high pregnancy or success rate according to Rock and associates [6,7]. Accurate diagnosis and treatment may reduce the necessity for surgical re-intervention in cases of obstructive vaginal malformations.
There are not long-term specific gynecologic clinical symptoms that have been reported related to obstructive vaginal anomalies [1].

Rock and associates have reported that women with imperforate hymen were more likely to have a term pregnancy than those with complete transverse septum that was the surgically repaired. Furthermore those patients with upper or middle complete transverse septum have less probability to conceive than those with a lower vaginal septum. Beside endometriosis, high spontaneous abortion rate have been reported as the long-term complaints in obstructing transverse and longitudinal vaginal septum cases [6].

Uterine anomalies with longitudinal vaginal septum are associated with many obstetric complications such as recurrent pregnancy loss, prematurity, abnormal fetal presentation, and preterm labor [7]. Additionally Ventolini et al. reported a case of obstruction of labor caused by a lower transverse vaginal septum [8].

The live birth rate has being reported to be 82% in patients with longitudinal septum and 94% in patients with transverse septum [7].

Therapy

Surgical removal of imperforate hymen and transverse vaginal septum can be performed through perineal and abdomino-perineal approaches. Moreover transverse vaginal septums can also be excised and an end-to-end anastomosis of the vaginal mucosa completed. However it must be taken in consideration that a stricture of the vagina may result and a Z-plasty may be recommended [6].

Conclusions

The infrequency and variable presentation of congenital vaginal obstruction anomalies may result in diagnosis delay and incorrect management. A high index of suspicion helps in early diagnosis. Health care providers should take account of vaginal septum in the differential diagnosis of early adolescent patients presenting with primary amenorrhea, hematocolpos and abdominal pain.

Symptoms at pre-menarcheal gynecological examination should guide the accurate management to avoid the known endometriosis complications of dysmenorrhea and/or infertility.

A comprehensive management is indicated to preserve reproductive potentials since a significant number of patients might experience menstrual irregularities, sexual problems and infertility.

References