Case Report

A Case Report on Transvaginal Septum Manifested by Haematocolpus

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ABSTRACT

Transvaginal septum is a rare congenital vaginal anomaly in which a thick fibrous tissue runs transversely in vagina, dividing Vagina into upper and lower cavities. Haematocolpus is a gynaecological condition and is usually referred to as vaginal accumulation or obstruction of menstrual blood, and is usually caused when there is no way for the menstrual blood to flow out such as in case of transverse vaginal septum. The prevalence of Transverse vaginal septum condition is at 1 per 70,000 females. Most of the time transverse vaginal septum goes unnoticed or undiagnosed until a female reaches her menarche when she presents to the clinic with the symptoms of cyclic abdominal pain, amenorrhea, menorrhagia, difficulty during mating and sometimes with the problems of difficulty micturition. The diagnosis can be done by careful history taking, gynaecological examination. Sometimes additional imaging tests such as ultrasound and MRI can be performed to obtain in detail information of the condition. Treatment for transverse vaginal septum associated with or without haematocolpus usually depends upon surgical excision of the septum. A 14-year-old girl presented to the clinic with the chief complaints of cyclical abdominal pain with amenorrhoea and difficulty to pass urine. Upon careful physical examination the girl was diagnosed with transverse vaginal septum associated with haematocolpus. Treatment done was incision and drainage of haematocolpus with marsupialisation under general anaesthesia. Patient was discharged upon finding no development of any events post-surgery and was followed for six months and was found to have normal menstrual cycle with no other complications. Transverse vaginal septum is a rare congenital genetic anomaly and sometimes haematocolpus is the manifestation where surgery is the immediate procedure to be done to prevent any further complications and to preserve the normal menstrual and reproductive functions.

Keywords: Transvaginal septum, Haematocolpus, Vaginal anomaly, Amenorrhea, Menorrhagia.

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INTRODUCTION

Transvaginal septum is a rare congenital utero-vaginal anomaly obstructing vagina and affecting every 1 in 70,000 females [2,3]. Transvaginal septum might be of either perforated (incompletely closed) or imperforated (completely closed) and can form at any part of the vagina i.e., either in upper part or central part or lower part of the vagina [1,3]. However, the reported approximate prevalence rates in terms of where the septum can form in vagina are found to be at 46% in upper vagina, 40% in central part of the vagina and 14% in lower part of the vagina [2,3]. In this condition a thick fibrous tissue called as septum runs across vagina longitudinally dividing the vagina into lower and upper cavities [3,10]. In imperforate septum cases, the septum causes an obstruction for the free outflow of menstrual blood leading to a condition called as haematocolpus or hematometra [1]. Haematocolpus is a condition in which menstrual blood gets collected or obstructed in the vagina due to either imperforate hymen or vaginal septum [1]. The exact cause for this congenital anomaly is not known, but combination of multiple factors such as in-utero exposure to some agents or autosomal recessive inheritance might be the possible expected causes[5,11]. However, the development of septum is said to occur during embryogenesis when Mullerian ducts and urogenital sinus do not fuse properly leading to vaginal obstruction [1,5,6,9]. The symptoms of transvaginal septum does not show up until a girl reaches her puberty or menarche as the condition is manifested by primary amenorrhea (in case of imperforate septum) or menorrhagia (in case of perforate septum), lower abdominal pain, cyclic abdominal pain, difficulty urinating, difficulty in mating and constipation [1,2,9,10]. Diagnosis of this condition always possess a challenge due to the absence of signs and symptoms until menarche and its resembles with other health problems due to which it often gets misdiagnosed [6,8]. However, proper medical history taking with careful physical, gynaecological examination helps to detect the condition and performing imaging tests such as Ultrasound and MRI would provide confirmation and in depth information about the condition such as exact location, thickness of septum and presence or absence of haematocolpus [1,2,3,7,8]. Treatment or approaches to treat transvaginal septum completely depends upon the type, thickness and location of the septum, a patient is having [2,5]. In case of a small septum, vaginal dilators can provide the solution, but in case where

dilation technique fails or where the septum is large, surgical excision or removal of the septum and drainage of obstructed vaginal blood (in case where imperforate vaginal septum causes vaginal blood obstruction) are an usually preferred treatment options[4,5,6,7]. Nevertheless, the complications of the surgery include scarring at the surgical site, dyspareunia, menstrual irregularities and fertility problems [1,5]. Definite follow up and post operative management remains a crucial part as not only to aid healing process but also to prevent narrowing of the vagina, to restore normal menstrual and reproductive functions [5,6,7].

Presentation of Case

A 14-year female with no history of Diabetes Mellitus, Hypertension, Asthma, Epilepsy, Tuberculosis, Thyroid abnormalities, CAD and CVA presented to a local hospital with chief complaints of difficulty in passing urine, cyclic abdominal pain and primary amenorrhea. Upon careful gynaecological examination and ultrasound imaging, she was diagnosed with haematocolpus for which surgery was performed and 200 grams of blood clot was removed and she was prescribed with oral contraceptives for withdrawal bleeding.

The following month she was referred to our gynaecology OP department at a tertiary care hospital with the chief complaints of difficulty in passing urine for 3 days, severe lower abdominal pain for 10 days and absence of menstruation for one month. Upon gynaecological examination a mass through anterior wall was felt per rectum. Careful clinical pelvic examination revealed absence of external vaginal opening, presence of blue hue at the introitus region and bulging of introitus region upon cough was seen. Ultrasound of pelvis showed presence of 7.8×5.3 cm hypoechoic collection with internal echoes in upper vaginal cavity and minimal free fluid of maximum thickness 9mm in endometrial cavity. MRI of pelvis showed presence of normal cervix, normal ovaries, normal myometrium, uterus measuring 6.6×2.4×3.2 cm, but mild dilation of the endometrial cavity with thickness measuring 6mm and evidence of haematocolpus distending vaginal lumen measuring 9.5×6.2×7 cm with a septum in the lower vagina causing obstruction. After thorough physical examination and imaging tests, the patient was diagnosed with transvaginal septum with haematocolpus for which she was planned for drainage of haematocolpus and vaginoplasty. Prophylactic antibiotics were administered prior to surgery. Under general anaesthesia and aseptic conditions, initially patient was placed in supine position, donor skin site was painted with betadine and split skin graft (SSG) was harvested from right thigh and then patient was changed to lithotomy position and foleys catheterisation was done. Cruciate incision was given at introitus region, 100ml of blood was collected. Excision of vaginal septum was performed and reconstruction of necessary vaginal portion was done with the SSG. Marsupialisation of the introitus edges were done and later malecot catheter in situ covered with sponge was placed and a condom was inserted into vaginal cavity to keep vagina patent and to prevent vaginal stenosis. Immediately after the surgery patient was administered with antibiotics and was monitored for vitals, malecot output and urinary output. After 5 days from the day of surgery, malecot catheter, foley's catheter and condom were removed after which betadine douching twice a day was performed. Patient had undergone surgical review after 2 weeks and upon careful pelvic and vaginal examination, presence of external opening with finger insinuating for >2 inches and OS was felt. Patient was discharged 3 weeks after confirming presence of no complications. At the time of discharge patient's mother was explained and advised to perform manual finger dilation to the patient for 2 weeks under explained sterile conditions and was asked to watch for menstruation and to refer to OP after 2 weeks.

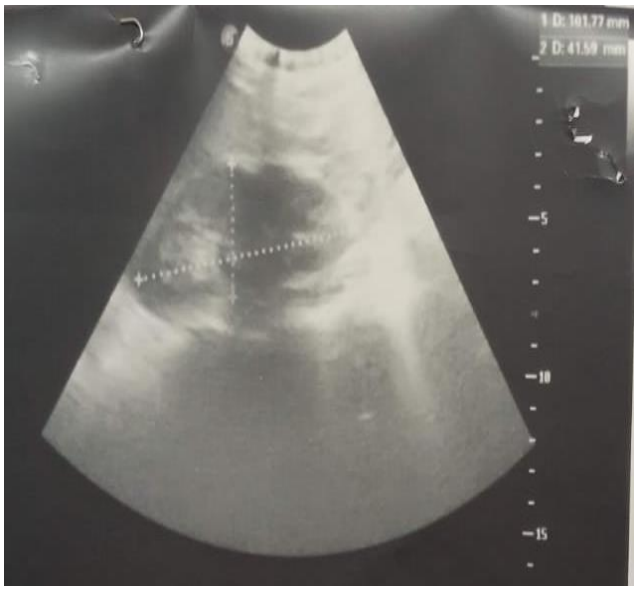

Figure 1: USG Abdomen of pelvis showing haematocolpus.

DISCUSSION

Transverse vaginal septum is a very rare congenital and a common form of mullerian duct anomaly occurring in foetus during reproductive tract development phase during which thick fibrous tissue occurs horizontally across the vagina causing vaginal obstruction [2,9,10,11]. Every 1 in 70,000 females was found to develop this anomaly[2,3]. Development of reproductive organs in the foetus usually begins around six weeks of gestation while inside the mother's uterus [11]. During this phase of embryogenesis or development, two Mullerian ducts slowly migrate towards each other and fuse at the centre [11]. Some of the tissue migrates upwards and develops into uterus and fallopian tubes and the remaining tissue migrate downwards and form part of vagina [11,12]. The Mullerian ducts then fuses with the vaginal plate forming vaginal canal[11]. Any abnormality during this development process or failure or incomplete reabsorption of the tissue between vaginal plate and the caudal aspect of the fused mullerian ducts results in blockage of the vagina leading to vaginal septum or septae [2,12]. These types of malformations or

abnormalities are called as Mullerian anomalies[11]. The vaginal septum varies in thickness and can either form in superior part (46%) or central part (40%) or inferior part (14%) of vagina[2,3,11]. The formed vaginal septum might be either vertical (dividing vagina into vertical cavities) or transversal (dividing vaginal cavity into upper and lower cavities) or oblique and based upon varying degrees of resorption failure, the septum might be either perforate (incomplete) or imperforate (complete)[3,5]. In case of perforate or incomplete septum, it leaves small spaces or tiny holes through which the menstrual blood passes out but causing periods to last for longer days 4-7 days, causes infertility problems or intercourse difficulties[4,9,10]. In case of imperforate or complete vaginal septum, the septum itself causes obstruction in the vagina and forms no way for the menstrual blood to flow out and hence menstrual blood gets obstructed or collected either in uterus termed as hematometra or in vagina termed as haematocolpus[1,4,9]. This transverse vaginal septum often goes undiagnosed until a female develops signs and symptoms such as amenorrhea, prolonged menstruation or menorrhagia, cyclical abdominal pain, lower back pain, fertility issues, difficulty in passing urine and constipation [1,2,6,8,9,10]. However, careful history taking and careful pelvic examination would help a gynaecologist to diagnose the condition and imaging tests such as ultrasound and MRI would give in-detail picture and information about the septum such as its exact location, thickness and presence or absence of haematocolpus [1,2,3,7,8]. Treatment and surgical options for transvaginal septum varies with patient's age, type, location and thickness and other manifestations of the septum [2,5]. Considering patient's age, removal of septum is considered to be easy when the girl reaches menarche[1]. In case of small septum and septae with large defects, non-surgical choice such as vaginal dilators are the preferred choice but in situations where dilation techniques do not offer solution, surgical excision would offer the permanent solution [4,5]. In situations of extensive cases, surgical excision of septum with anastomosis of the proximal and distal ends or lifting of grafts is performed[4]. In cases where septum is manifested with haematocolpus, prior incision to drain out the obstructed blood followed by oral contraceptives pills before definitive repair should be done[4]. Prophylactic antibiotics, pain relieving medicines would help the patient to deal with any opportunistic surgical infections and post-surgical pain. Methods such as definitive follow up and post-surgical dilation techniques not only helps in preventing surgical complications such as surgical site scarring, vaginal stricture, vaginal stenosis or vaginal narrowing and but also helps in improving patient's outcome such restoring normal menstrual and reproductive function [5,6,7].

In our case, a 14-year female patient with chief complaints of absence of periods for one-month, cyclical lower abdominal pain for ten days and difficulty in urination for 3 days was referred to our gynaecological OP department from a local hospital where she was previously diagnosed with haematocolpus the previous month and had undergone surgery for the same and was prescribed with oral contraceptives post-surgery for withdrawal bleeding. Upon presenting to our hospital patient had no comorbidities such hypertension, thyroid problems, diabetes mellitus, seizures and asthma and had no complains of fever, constipation, nausea and vomiting before or upon arrival to our hospital. Upon careful history taking, patient's mother was found to have no health comorbidities during her pregnancy with this child or at the time of birth. Upon gynaecological examination a mass through anterior wall was felt per rectum. Careful clinical pelvic examination revealed absence of external vaginal opening, presence of blue hue at the introitus region and bulging of introitus region upon cough was seen. Ultrasound of pelvis showed presence of 7.8×5.3 cm hypoechoic collection with internal echoes in upper vaginal cavity and minimal free fluid of maximum thickness 9mm in endometrial cavity. MRI of pelvis showed presence of normal cervix, normal ovaries, normal myometrium, uterus measuring 6.6×2.4×3.2 cm, but mild dilation of the endometrial cavity with thickness measuring 6mm and evidence of haematocolpus distending vaginal lumen measuring 9.5×6.2×7 cm with a septum in the lower vagina causing obstruction. Upon consideration of all diagnostic results, patient was diagnosed with lower transverse vaginal septum with haematocolpus. Upon careful considerations of patient demographics and clinical presentations, surgical intervention was planned for the patient to treat haematocolpus by draining the obstructed blood and to excise the septum and to reconstruct the part through vaginoplasty. Patient was administered with health supplements and prophylactic intravenous antibiotics prior to surgery. Under general anaesthesia and aseptic conditions, initially patient was placed in supine position and thigh parts were painted and draped with betadine solution and split skin graft (SSG) was carefully harvested from the right thigh region. Later, patient was changed to lithotomy position and foley's catheter was inserted. Infiltration was done with adrenaline saline in order to reduce blood loss during surgery. Cruciate incision was given at introitus region and drainage of approximately 100 ml of blood was done followed by saline wash. Malecot catheter covered with sponge for drainage of any bodily fluids or blood and as well to prevent vaginal stenosis post-surgery was then placed in situ. Marsupialisation of the edges of the introitus was done. A condom was then placed into the vaginal cavity to prevent vaginal stenosis. Graft was replaced and fixed at the donor site and aseptic dressing was done. Antibiotics to treat any opportunistic infections and pain relieving medicines were administered immediately after the surgery. Regular monitoring of vitals, malecot output and urinary output was done. After 5 days from the day of surgery, malecot catheter, foley's catheter and condom were removed after which betadine douching twice a day was performed to prevent vaginal stenosis. Patient had undergone surgical review after 2 weeks during the hospital stay and upon careful pelvic and vaginal

examination, presence of external opening with finger insinuating for >2 inches and OS was felt. To prevent any vaginal stenosis patient's mother and the patient were advised and explained in detail the procedure to perform manual vaginal dilation (with hand fingers) for 2 weeks. Patient was discharged after 3 weeks, confirming presence of no other complications. At the time of discharge patient's mother was explained and advised to perform manual finger dilation for 2 weeks for the patient under explained sterile conditions. At her follow up OP review after 2 weeks, operating site was found to be in good condition, no any abdominal distension with no presence of vaginal stenosis or vaginal stricture or any other surgical complications. Upon 2 months of follow up patient was found to have normal menstruation with no other further complications or complaints.

CONCLUSION

Transvaginal septum or TVS is a very rare congenital mullerian ducts anomaly of a reproductive system affecting 1 in 70,000 females in which an abnormally formed vaginal septum causes obstruction in the vaginal cavity as a result of which either menstrual blood gets accumulated in the vagina causing haematocolpus or causes prolonged menstruation. Discovery of septum happens only when a patient presents with the symptoms of amenorrhea, abdominal pain, difficulty in passing urine, constipation and fertility issues. Once diagnosed, treatment should be done as soon as possible to once diagnosed prevent further complications. Bleeding at operated site, vaginal scarring, vaginal stenosis or vaginal stricture or vaginal narrowing are the complications after surgery that require careful management.

Consent: Patient written informed consent form was obtained for publication of the case report with diagnostic image.

Conflict of Interest: 2022, Dr. Rishitha Sanjana Abbagoni et.al.

This is an open access case report and the authors have no conflicts of interest to declare. We certify that the submission is original work and is not under review at any other publication.

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