



Urograffin colpography for the diagnosis of transverse vaginal septum and literature review

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Abstract

A case of non-obstructed low transverse vaginal septum presenting with primary infertility and dysmenorrhoea is reported. Diagnosis was made using urograffin colpography. The septum was excised via a perineal approach without complications. Pregnancy occurred within three months of excision. The case is reported because of its rarity and the fact that the mode of diagnosis has not been previously highlighted.

Key words: Transverse vaginal septum, urograffin colpography, pregnancy

Introduction

Congenital abnormalities do occur in various parts of the body including the reproductive system with utero-vaginal abnormalities accounting for seven percent of them.¹ The transverse vaginal septum which was first described in 1877.² is one of such abnormalities. It is very rare, with an incidence of 1:200,000 to 1:700,000.³ In most cases no cause is found but autosomal recessive inheritance has been postulated in a few cases while drugs like Diethylstilbestrol and oestrogens ingested in pregnancy could account for a few cases. It usually occurs alone but may occasionally be associated with other congenital abnormalities.⁴⁻⁶ The development of the vagina involves the fusion of the Mullerian tubercle - superiorly with structures of the urogenital sinus inferiorly to form the vaginal plate. Subsequently there is canalisation of the vaginal plate. The transverse vaginal septum arises from incomplete canalisation of the vaginal plate. Various degrees of failed canalisation may occur at different levels of the vaginal plate to give rise to transverse and longitudinal septa. Transverse septa range from complete non-canalisation to non-canalisation in

the upper, middle and lower parts. While earlier studies showed failure of canalisation to be commonest in the upper region, followed by the middle, and then the lower region respectively,^{7,8} more recent studies show the reverse to be the case.^{9,10} Transverse vaginal septa may be perforate or imperforate. The presentation is varied and depends on the degree of canalisation and whether the obstruction is perforate or imperforate. The most common presentation in imperforate cases is post puberty when it may present with cryptomenorrhoea, cyclical monthly pelvic pain, suprapubic mass, constipation and urinary retention. Occasionally presentation has taken the form of huge abdominal masses with ascites, severe anaemia and wasting.¹¹ Perforate septa often present with dyspareunia, infertility, difficulty in insertion of tampons and labour dystocia. Neonatal cases have also been described which presented as hydrocolpos.¹² Diagnosis is made from history, clinical examination aided by ultrasound and sometimes magnetic resonance imaging (MRI). Many things are taken into consideration in choosing treatment. These include the position and thickness of the septum, whether it is perforate or not, the facilities available and the wishes of the patient. Treatment is surgical in majority of the cases but may be non-surgical in a few cases. Results of treatment are very good in the low variety but complications are more common in the high,

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middle placed and thick septa. The major complications are re-occlusion, vaginal stenosis, and injury to surrounding structures. This case is presented because diagnosis was by a relatively inexpensive method of urograffin colpography which is hardly mentioned in the literature and could be very useful in resource constrained countries.

Case report

The patient presented with a history of primary infertility and dyspareunia for one year seven months. She was 26years old, 1.65meters tall and weighed 67kg (BMI 24.6/kg²). Menstruation was regular and adequate in volume. There was no history of previous pelvic surgery or infection. General examination revealed no abnormalities. The breasts were well developed (Tanner stage 5), there was no demonstrable galactorrhoea and secondary sexual characters were normal. The abdomen was scaphoid and organomegaly or masses were absent. The examination of the vulva and vagina was terminated because of the severe discomfort felt by the patient. She was subsequently scheduled for an examination under anaesthesia (EUA).

The husband's semen count showed a normal sperm population. An abdomino pelvic ultrasound scan showed a normal uterus, no haematometra or haematocolpos, and normal kidneys. Her hormone studies were essentially normal. At EUA, the vulva was found to be well developed. A 'blind vagina' which measured 3 centimeters in depth was felt. The urethra was normal but about three centimeters below it, there was a pin point sinus 1 centimeter in length which appeared blocked when probed. The cervix was not visualised. A diagnosis of transverse vaginal septum was made. Since the vagina appeared to be blind the history of normal menstruation became suspect. At EUA scheduled during menstruation, menstrual blood was seen squirting out from the pin point hole below the urethra which had earlier been described and thought to be blind. This was accurately recorded and patient was sent for a urograffin colpography. At the procedure, 20mls of urograffin was injected through the small hole below the urethra. It confirmed the presence of a capacious vagina behind a thin septum (Figs 1 and 2). Surprisingly, an MRI showed normal urogenital system but was

unable to detect the septum.

After passing a urethral catheter, a cruciate incision was made with the vertical and horizontal incisions crossing at the pin point hole. A septoplasty was done and the proximal and distal ends of the septum were apposed using vicryl 2/0 sutures to leave a vagina which admitted two fingers. Bleeding was minimal. The patient was placed on antibiotics and analgesics and discharged. Two weeks later good healing was confirmed. Attempted intercourse had been painful and so patient was given a wide glass tube about three centimeters in diameter to improvise as a dilator. She was told to lubricate this copiously with Vaseline or -Y jelly and dilate the vagina at least two times a day for four weeks. After four weeks the couple was able to resume gentle intercourse and by the eighth post-operative week, satisfactory intercourse was achieved. Three months after the operation the patient presented with amenorrhoea and ultrasound scan confirmed an eight week old pregnancy.



Fig. 1: Urograffin colpography



Fig. 2: Urograffin colpography

Discussion

The patient presented with infertility and dyspareunia, a transverse vaginal septum was excised vaginally following which the patient conceived within three months. The age of presentation of 24 years is consistent with the mean age of presentation of non-obstructed transverse vaginal septa,⁹ while the presenting symptoms of infertility and dyspareunia are also the commonest symptoms seen in such cases. Obstructed cases present earlier at a mean age of 14 years. Transverse vaginal septa are classified as low, medium or high depending on their depth. Those less than 3cm from the introitus are low, 3-6cm are medium while those greater than 6cm are called high. This patient had a low type which is similar to the findings in some studies.^{9,10} The perforate trans-vaginal septum seen here is the least common type and was seen in 39% of cases in the series by Williams et al.⁹ The diagnosis of transverse vaginal septum is aided by investigations like ultrasound, and MRI depending on facilities available. MRI is relatively expensive and is not available in most resource constrained countries. In this case the MRI failed to detect the septum as was also previously reported.¹³ This case illustrates the use of another simple method of investigation using urograffin, a radio opaque dye, which has not been previously reported in the literature. It was critical in determining the extent of the vaginal cavity and thickness of the septum. This simple investigation provided more information than the more expensive MRI. It is recommended in appropriate cases in resource constrained areas where MRI may be unavailable or unaffordable to the patient. A method of saline infusion sonocolpography has also been described.¹³

The treatment of low vaginal septa with a thin membrane is simple excision and drainage of haematocolpos if any followed by anastomosis of the upper and lower vaginae.¹⁴ Up to 54% of cases were treated by this method.⁹ The drainage may be done laparoscopically.¹⁵ A novel non-surgical method which involves serial balloon dilatation over a trans vaginally inserted guide wire to create a durable outflow tract from the uterus to the lower vagina has also been described.¹⁶ This is adequate in most cases and yields good functional results.

However for thicker septa –greater than one centimeter – and high or middle septa the risk of

shortening of the vagina and stenosis and injury to surrounding structures is high. Various strategies have been devised to obviate this. Such cases should be referred to centres better skilled for such repairs. Meanwhile symptoms may be controlled temporarily by the use of progesterones or oral contraceptives to reduce menstrual secretions.¹⁷ The best chance of achieving a good result is the first attempt. It is therefore important for practitioners to be highly selective and attempt only cases they can handle. In some series, 31.2% of the patients had had previous unsuccessful operations.¹⁰ This underscores the need for careful selection and referral.

Middle and high septa may be excised using the perineal or abdomino perineal approaches. The major problem is often that of closing the defect left after the excision of the septum and the after effects of the closure. Preoperative dilatation which reduces the distance between the proximal and distal vaginae has been utilised by some authors.¹⁸ Others have used molds and stents¹⁹ to maintain patency while skin and Intestinal segments⁹ have also been utilised to bridge the gap. To address the same problem, pull through and push through procedures have also been devised.^{20,21} These have not always yielded perfect results as continual dilatation is usually often needed to maintain patency.

The elimination of the need for post-operative dilatation is the major advantage of the use of Z- and Y-plasty techniques²²⁻²⁴ to bridge the gap. These techniques are not normally in the armamentarium of gynaecologists. There is hence a need for a multidisciplinary approach or referral to plastic surgeon in such difficult cases. The authors of the Y-plasty technique²⁵ used an interdigitating procedure of two flaps with no need for septal excision to produce a saw toothed scar rather than a circular scar. This therefore altered the vectors of contracture formation and thus eliminated the need for postoperative dilatation. None of the eight consecutive cases they treated needed dilatation. They claim that the procedure can easily be learnt by the general gynaecologist. This condition has a lot of psychological impact especially as long term dilatation is always advised. Psychological support should therefore be provided as most patients find dilatation irksome.²⁶ In certain rare situations where

for cultural and religious reasons consent is not given for a vaginal approach which destroys the hymen, vaginoscopy has been used in order to preserve the hymen.²⁷

The results of treatment of transvaginal septum are generally good and lead to the resumption of satisfactory intercourse and fertility as in this case where conception occurred about three months after the excision of the septum. Conception is more difficult to achieve in thick high and middle level septa.

Complications of surgery include restenosis, dyspareunia, infertility and injury to surrounding structures. One benefit of treatment is that endometriosis which is the result of the condition rather than the operation regressed in some obstructed cases after the obstruction was released.²⁸

Conclusion

Transverse vaginal septum is a rare condition, its presentation may be varied, and diagnosis is facilitated by investigations. A simple inexpensive method of investigation has been highlighted. The treatment chosen will depend on a number of factors like position, thickness of the septum, facilities available and the wishes of the patient. Treatment of low septa gives very good results. The major challenge is that of avoiding re-obstruction and vaginal stenosis in middle, high and thick septa.

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