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A Study of Mullerian Anomalies in a Tertiary Care Teaching Hospital of North India

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Abstract: ***Mullerian developmental defects are congenital anomalies of the female reproductive tract which may adversely affect a woman's obstetric and gynaecological health .In the present study, all patients presenting with Mullerian anomalies in the department of Obstetrics & Gynaecology, MMIMSR, a tertiary care teaching hospital in Ambala , Haryana, North India, during the period from July 2013 to June 2014 were included. They were studied & results were analysed including the incidence & presenting complaints. They were classified into several groups using the AFS classification of Mullerian Anomalies ,evaluated properly and treated accordingly. It was concluded that with proper evaluation , diagnostic workup and judicious management options these patients could lead a healthy life thereafter.***

Keywords: unicornuate, bicornuate, mullerian anomalies, vaginal septum,renal abnormality.

1. Introduction

Mullerian duct anomalies consist of a set of structural malformations resulting from abnormal development of the paramesonephric ducts.The prevalence of these anomalies ranges from 0.001 to 10 % in the general population and from 8 to 10 % in women with adverse reproductive history.(1,2). The embryological development of the female reproductive system is closely related to the development of the urinary system ,therefore, anomalies in both the systems may co-exist in upto 25 % of these patients (3). Other associated malformations may affect the gastrointestinal tract (12 %) or musculoskeletal system (10-12 %) (3,4). Symptoms appear principally during adolescence or early adulthood and affect the reproductive capacity of the women. When clinically suspected, other investigations eg. Hysterosalpingography(HSG), Ultrasonography(USG) ,MRI & diagnostic laparoscopy are required to confirm the diagnosis. The classification of these malformations relates to their embryogenesis and defines their therapy and prognosis. . We have used the AFS (American Fertility Society) Classification of Mullerian Anomalies for grading our patients with these defects. Mullerian anomalies consist of a wide range of defects that may vary from patient to patient . Therefore, their management must also be individualized .

2. Aims and Objectives

The study was undertaken to determine the incidence of Mullerian anomalies , the various clinical presentations, associated congenital anomalies , other co-existing conditions and formulating the optimal mode of management in such cases.

3. Materials & Methods

Our study was a hospital-based prospective study conducted in the department of Obstetrics & Gynaecology , MMIMSR (Maharishi Markandeshwar Institute of Medical Sciences & Research), Ambala- a tertiary care medical college in North India over a period from July 2013 to December 2014 . All patients who were found to be suffering from Mullerian anomalies (diagnosed through previous clinical history, physical examination, radiological aids eg USG,HSG,MRI & diagnostic laparoscopy) were included in this study and the results were analysed critically .

4. Results and Observations

Out of 15000 patients, 16 had Mullerian anomalies , so the incidence was found to be 0.10 % (1 in 1000).

Type of Mullerian anomaly	No of patients (%)
Unicornuate uterus • Non-communicating rudimentary horn with functional endometrium(3) • Non-communicating rudimentary horn with non-functional endometrium (1)	4 (25.0)
Bicornuate uterus	3 (18.7)
Transverse vaginal septum with vaginal agenesis • Lower vagina (1) • Upper vagina (1) Transverse vaginal septum (1)	2 (12.5) 1 (6.25)
Uterus didelphys	1 (6.25)
Hypoplastic uterus	3 (18.7)
Arcuate uterus	1 (6.25)
Septate uterus with complete longitudinal vaginal septum	1 (6.25)

Patients usually presented with abdominal pain, primary amenorrhoea , dysmenorrhoea & infertility. Most of these patients presented with more than one complaint.

Presenting Complaint	No of patients (%)
Abdominal pain	8 (50.0)
Primary amenorrhoea	7 (43.7)
Infertility	5 (31.2)
Dymenorrhoea	4 (25.0)
Dyspareunia	3 (18.7)
Asymptomatic	3 (18.7)

In our study, 66 % were in the age group 15-17 years , followed by 20 % in 18-20 years & 14 % in 21-23 years .

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Age (years)	Percentage of patients (%)
15-17	66
18-20	20
21-23	14

Out of three patients with transverse vaginal septum presented with primary amenorrhoea , two had associated vaginal agenesis & were treated with excision of the septum along with McIndoe's vaginoplasty followed by mould insertion and regular vaginal dilatation. All three patients resumed regular menstrual cycles thereafter. Patients with obstructive mullerian anomalies presented with abdominal pain,dysmenorrhoea and haematocolpos/haematometra. Those with septum were treated successfully with excision of the septum followed by drainage of haematocolpos/haematometra. Three cases of unicornuate uterus with non-communicating functional horn presenting with haematometra with endometrioma were treated with excision of the rudimentary horns and removal of the chocolate cysts. One case of unicornuate uterus with non-communicating functional horn with ipsilateral chocolate cyst was treated with laparoscopic excision of the functional horn & chocolate cyst. Out of three cases of bicornuate uterus, two were incidental findings during caesarean section (one for primi with breech & one for transverse lie with complete placenta previa). One case of septate uterus with complete longitudinal vaginal septum was treated with excision of the longitudinal septum hysteroscopically.

Three patients had associated other congenital anomalies :

- Complete vaginal septum with haematocolpos (absent right kidney + ureter)
- Unicornuate uterus with non-communicating functional horn with ipsilateral chocolate cyst (ipsilateral renal agenesis)
- Primary amenorrhoea with transverse vaginal septum in lower vagina (obstructed) had a small , contracted pelvic kidney.

Discussion

In this particular study, the incidence of Mullerian anomalies was found to be 16 out of 15000 patients (0.10 %) ie 1 in 1000. Similar incidence was observed in other studies conducted by Rock et al (1,3) and Crook , D.O et al (11). In our study , 66 % of patients presented between 15-17 years . In another notable study by Mane et al, the mean age of presentation was typically at 17 years (5). In a study by Reindollar et al, it was seen that Mullerian anomalies typically presented in adolescence.(6). In our study, around 80 % of the total paients presented in the adolescent age group (10-19 years). The patients mostly presented with chronic abdominal pain (50 %) closely followed by primary amenorrhoea (43.7 %) , dysmenorrhoea (25 %), dyspareunia (18 %) & infertility (31.2 %). In a study by Jeon et al, these again were the most common presenting complaints with incidence of 10.8 %, 11.5 %, 12.15 % ,12.4 % and 8.6 % respectively. (7). Among the cases presenting with primary amenorrhoea , 42.8 % had transverse vaginal septum followed by dysgenesis of Mullerian ducts (14.2 %). All the cases of transverse vaginal septum were treated successfully with resection of the septum & those with vaginal agenesis were treated by McIndoe's vaginoplasty. The results were comparable with those in a study by Parikh R M et al (8).In our study, 37.5 % patients presenting with abdominal pain had transverse vaginal septum with haematocolpos/haematometra. These values correspond well with the findings of Deligeoroglou et al, where four patients of transverse vaginal septum presented with hypogastric abdominal pain & were treated accordingly (9). In 25 % cases ,the abdominal pain was found to be because of unicornuate uterus with a non-communicating horn . The cause of pain in the case of a rudimentary horn was most probably due to distension of the horn. Rusen Atmaca et al, also cited a similar case presenting with acute abdominal pain & was treated with excision of the rudimentary horn (10). Among the cases presenting with the chief complaint of infertility , 31.2 % had dysgenesis of Mullerian ducts which were surgically corrected with vaginoplasty and proper patient counseling. Similar findings were found in a study by Grimbizis G. F. et al (12). A case of septate uterus with complete longitudinal vaginal septum was treated successfully with hysteroscopic excision of the septum. There were three cases of bicornuate uterus , out of which two were incidentally diagnosed during emergency caesarean section (one for primigravida with breech presentation & second for transverse lie with complete placenta previa). We found that the most common co-existing congenital anomalies were renal (18.75 %). According to Li S et al, in his study, found 30 % association between renal agenesis and Mullerian anomalies. (15)

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