

## Reconstruction in Congenital Anomalies of Vagina

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**C**ONGENITAL absence of Mullerian duct system originate during early embryonic development. Complete absence of the duct system finds its phenotypic expression in the absence of the uterus, oviduct and vagina. Partial failure of formation of cranial or caudal portions of the Mullerian ducts results in congenital absence of the above organs.

This paper presents study of different anomalies of vagina and role of plastic surgery in congenital absence of vagina.

**Table 1**  
*Anomalies of the vagina*

Congenital absence of vagina	5
Septate vagina	4
Imperforated hymen	5
Total no. of cases	14

Special attention was paid to congenital absence of vagina.

### Diagnosis

Many young girls as well as their parents, are completely unaware of these congenital anomalies, until they reach 14-16 years of age. When they fail to menstruate they are brought for consultation. Diagnosis of anomalies of vagina is not

difficult. Inspection customarily reveals normal or slight underdeveloped labia. Separation of labia reveals absence of vaginal opening, imperforated hymen and low vaginal septum.

In all patients detailed clinical history was taken and proper clinical examination was done as shown in Table 2. Special investigations were also done as shown in Table 3. Chromosome studies could not be done due to lack of facilities.

**Table 2**  
*Findings on clinical examination*

i. Age	Age in years	No. of cases
	13-19	12
	20-27	2
ii. Marital status		
Married		6
Single		8
iii. Secondary sex characters including external genitalia were well developed except in one case who had skeletal and urinary tract anomalies. Patients looked feminine in all respects.		
iv. Bony deformities (Kyphoscoliosis of cervico dorsal lumbar vertebrae) seen in one.		

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**Table 3***Findings of special investigations in 5 cases with congenital absence of vagina.*

Investigations	No. of cases investigated	Observations	Comments
Buccal smear	5	Chromatin +ve 4 " -ve 1	
Vaginal smear	5	Atrophic smear 1 Normal smear 4	Good hormonal response seen in 4 cases.
Cystoscopy	1	Bladder normal, two uterine openings on passing ureteric catheter could go upto 15 cms. on left side.	Left kidney absent and half of ureter developed.
Pyelogram	3	Normal in 2. In one case absent left Kidney.	Urinary tract anomalies fairly common.

v. Vaginal examination findings :		Rudimentary uterus.	1
Absent vagina.	5	Absent uterus.	1
Low and mid vaginal Septum.	2 (Perforations)	b. Fallopian tubes :	
Imperforate hymen with haematocalpos.	2 (Imperforations)	Normal.	2
	5	Absent tubes.	1
		c. Ovaries :	
		Normal Looking	2
vi. Pelvic findings (Rectal examination)		Absent	1
Haematometra	1	d. Associated other anomalies :	
Nodular uterus	2	Left pelvic hypoplastic kidney.	1
Uterus not felt	2		
Normal size uterus	2		
Haematocalpos	7		

**Table 4***Findings of laparotomy done in three cases with absent vagina*

	No. of cases
a. Uterus.	
Haematometra with absent vagina.	1

**Table 5***Review of methods of constructing artificial vagina.*

## Non-surgical

1. Simple pressure (Frank, 1938)

## Surgical

1. Intestinal transplantation.

a. Small intestine (Baldwin, 1907)

b. Rectum (Popoff, 1910; Schubert, 1911)

2. Pedunculated flaps.
  - a. Simple labial and thigh flaps (Graves, 1921)
  - b. Tube pedicle flap from thigh (Frank and Greist, 1927).
3. Simple reconstruction with insertion of form (Wharton, 1938).
4. Simple reconstruction with insertion of inlay graft over a form (McIndoe, 1938).
5. William's operation (1964) (Blind skin tunnel).

The following cases are considered for construction of artificial vagina :

1. Rare case of absent vagina and normally functioning uterus. It was done in one of the cases of vaginal atresia who, had haematometra due to absent vagina and noncanalized cervix. She had come in emergency with pain in abdomen. Abdomino-perineal operation was done next day and vagina reconstructed. Patient began to mensurate regularly.

2. Patient who is married and or has made plans for marriage, should have a constructed vagina. Of the five patients in present series two were married, who complained of inability to have satisfactory coitus. One of the unmarried patients had plans to marry. Vagina was constructed with McIndoe's operation and she got married after one year and had no coital trouble.

### Surgical Corrections :

In five patients with haematocolpos hymen was cut and blood drained. Vaginal septum was cut in three non-pregnant patients and vagina was of normal length in these patients. One patient had come in labour with perforated vaginal septum. It was cut and she delivered vaginally. Five patients underwent McIndoe's operation. Dental acrylic mould covered with graft used in 4 cases and rubber sponge covered with condom using graft used in one case. Dental acrylic moulds of Stabler's type (1966) as shown in table 6 was a generous groove anteriorly to accomodate urethra.

**Table 6**

*Measurements of three moulds in centimeters (Stabler, 1966)*

	Length	Width at Mid Point	Thickness		Circumference	
			Upper end	Lower end	Upper end	Lower end
1.	10.5	5.50	2.4	1.8	14.5	12.5
2.	10.5	5.00	2.4	1.5	12.5	10.5
3.	10.0	4.75	2.2	1.3	11.0	10.0

Comparative study of complications is given in table 7.

Follow up of cases is given in table 8.

Table 7

*Comparative study of Complications*

Author	Year	No. of cases	Fallow -up	Prostheses	Skin graft	Bleeding	Sloughing Urethra	Urethro vaginal fistula	Complication VVF	Results RVF
Telinde et al	1957	32	29	Balsa wood form	Superior medial aspect of thigh	1	2	X	X	81%
Miller & Stout	1957	54	45	Plastic obturator	Skin graft (45)	1	X	1	1	90% among married patients.
Leduc et al	1968	15	8	Sponge rubber form, cover with condom	Skin graft Thigh	X	X	X	X	Good results in 6 out of 8.
Present series	1976	4	4	Dental acrylic mould Rubber sponge cover with condom	Superior medial aspect of thigh	X	1	X	X	Good in 3 out of 4 cases, using acrylic mould Unsatisfactory in 1 case where rubber sponge mould used.

Table 8

*Follow up results of grafted cases.*

Author	No. of cases	Follow up	Married	Satisfactory coitus	Unsatisfactory coitus
Miller & Stout (1957)	46	37(80%)	22(47%)	20(90%)	2(9%)
Barrows (1957)	6	6	Excellent results in 5 cases and fair in one.		
Monesterio. F, et al (1972)	21	21	Excellent results in 19 cases.		
Present series	5	5	Good results in 3 cases, fair in one and unsatisfactory in one.		

**Comments :**

According to Word, 'Realdus Columbus' may have been first to describe congenital absence of vagina. It is an unusual anomaly. Owen, in 1942 found only 6 cases in 500,000 female admissions to the charity hospital. Counseller found this condition occurring once in 4,000 female admissions at Mayo Clinic.

Abnormalities of urinary tract have been found in one out of 5 cases of our female patients. This association is substantiated in the literature by Counseller (1949), Barrows (1957). Before surgical correction of congenital anomalies of vagina, it is thus necessary to find out urinary tract anomalies.

Association of skeletal deformity is also known to occur with congenital absence of vagina as reported by Leduc et al (1968); Baird & Lowry (1974); Muechler (1975). Same was true in one of our 5 cases who had skeletal urinary tract anomalies combined.

Many ingenious methods have been devised to construct vagina. Some of them

are historical. All the techniques start with development of space between bladder and rectum (shown in table 5). McIndoe applied the technique of skin grafting to the management of construction of absent vagina.

**Summary**

Fourteen cases have been studied on congenital anomalies of vagina, viz 5 cases of congenital absence of vagina, 4 septate vagina and 5 imperforated hymen.

A detailed clinical history and physical examination was conducted on all such cases. However, special investigations were carried out in 5 cases with congenital absence of vagina.

Urological anomalies were detected in 3 cases.

Plastic repair of vagina was done in 4 cases of absent vagina, using skin graft over dental material mould. good results were obtained in 3 cases and fair in one case. No major post operative complication was observed in the cases among the present series.

## REFERENCES

1. Baird, P. A. & Lowry, R.B. : *Am. J. Obstet. & Gynec.*, 18, 290, 1974.
2. Baldwin, J. F. : *Ann. Surg.*, 40, 398. Quoted by Thomas, J.D., Whartan, L.R., Telinde, R.W. 1957. *Am. J. Obstet. & Gynec.*, 74, 397-404.
3. Barrows, D.N. : *Am. J. Obstet. & Gynec.*, 73, 609-14, 1973.
4. Bryan, A.L., Nigro, J.A. & Counseller, V.S. : *Surg. Gynec. Obst.*, 88, 79, 1949. Quoted by Telinde, R.W. *Operative Gynaecology*, 4th ed. 457, 1970.
5. Frank, R.T. : *Am. J. Obstet. & Gynec.*, 35, 1053, 1908. (Quoted).
6. Frank, R.T. & Geist, S.H. : *Am. J. Obstet. & Gynec.*, 14, 712, 1927 (Quoted).
7. Graves, W.P. : *S. Clin. North America*. 1 611, 1921 (Quoted).
8. Jones, H.W. (Jr.) & Wheelers, C.I. : *Am. J. Obstet. & Gynec.*, 104, 348, 1969.
9. Ledue, B., Compenhout, J.V. & Simard, R. : *Am. J. Obstet. & Gynec.*, 100, 512-20, 1968.
10. McIndoe, A.H. & Bannister, J.B. : *J. Obstet & Gynaec., Brit. Emp.* 45, 490, 1938. (Quoted Ortiz Mousterio, F. & others. *Excerpta Medica Obstet. & Gynec. abstract* 2830, 25.
11. Miller, N.F. & Stout, Wallace. : *Obst. & Gynec.*, 9, 48-54, 1967.
12. Muechler, E.K. : *Am. J. Obstet. & Gynec.*, 121, 567, 1975.
13. Owen, N. : *Surgery*. 12, 139, 1942. (Quoted by Miller & Stout. *Obst. & Gynec.* 9, 48, 1957.
14. Popott, D.D. : *Russak, Urach, St. Petersburg*. 9, 1512, 1910. (Quoted by Miller & Stout. *Obst. & Gynec.* 9, 48, 1957).
15. Schubert, G. : *Zentralbl. Gynak.* 35, 1017, 1911. (Quoted by Miller & Stout. *Obst. & Gynec.* 9, 48, 1957.
16. Stateler, F.J. : *Obstet. & Gynaec., Brit. Emp.* 73, 463-66, 1966.
17. Thompson, J.D., Whartan, L.R. & Tilinde, R.W. : *Am. J. Obstet. & Gynec.*, 74, 397-401, 1957.
18. Whartan, L.R. : *Ann. Surg.*, 107, 842, 1938.
19. Word, B., & South M.J. : Quoted by Miller & Stout. *Obst. & Gynec.* 9, 48, 1957.