
In The Name Of
GOD

UTERINE ANOMALIES AND CERVICAL INSUFFICIENCY

Müllerian anomalies

- Relatively common (7– 10% of all women)
- Complications : infertility, recurrent pregnancy loss, and poor pregnancy outcomes that occur in 25% of these women
- Pregnancy complications : preterm labor, breech presentations, IUGR, abnormal placentation, ….
- **Cervical cerclage is often indicated for prevention of preterm labor**

Incidence of Müllerian Defects

Fertile and infertile women	3–4%[161]
Women with recurrent miscarriages	5–10%[158]
Women with late miscarriages and preterm deliveries	>25%[158]

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human reproduction

ORIGINAL ARTICLE *ESHRE pages*

The ESHRE/ESGE consensus on the classification of female genital tract congenital anomalies†,‡

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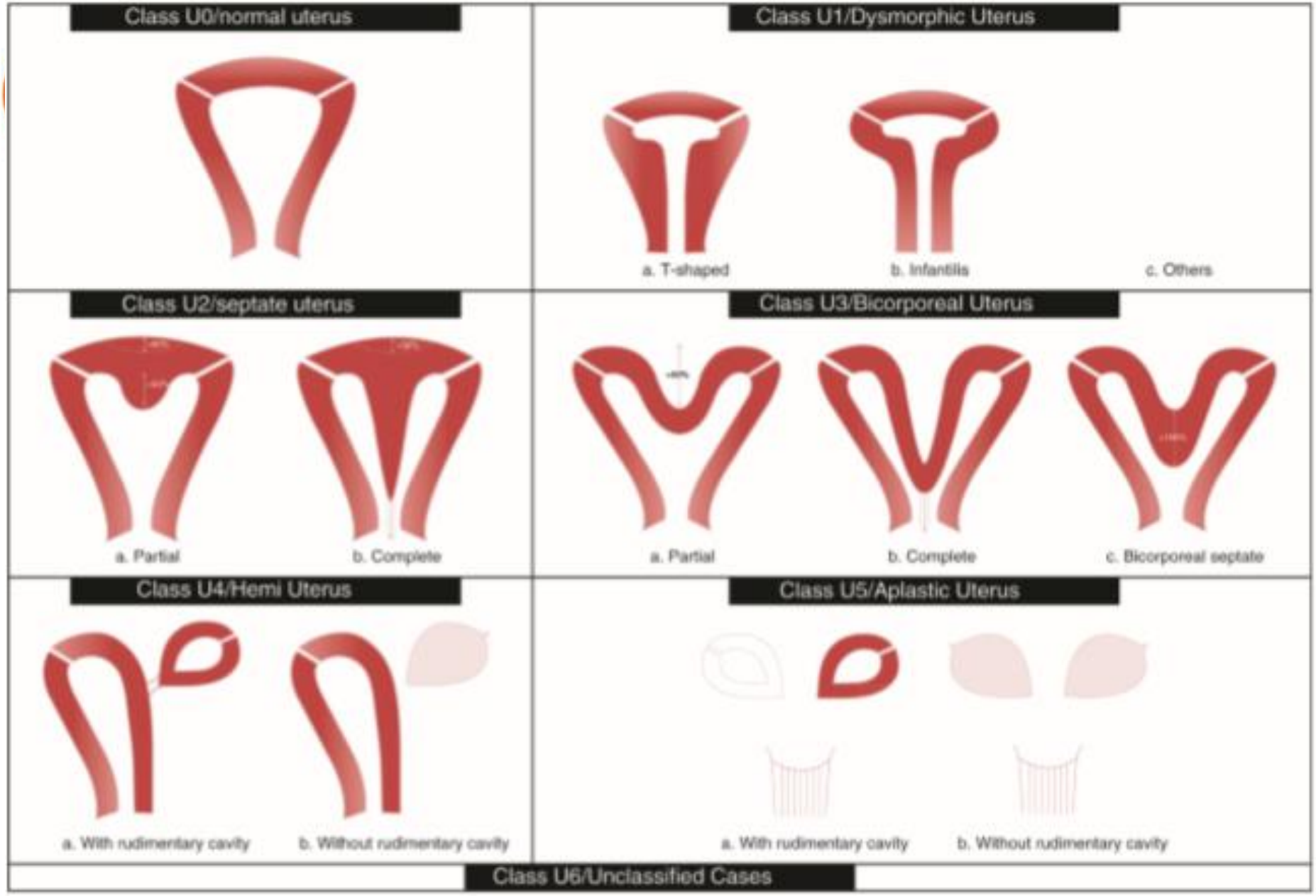
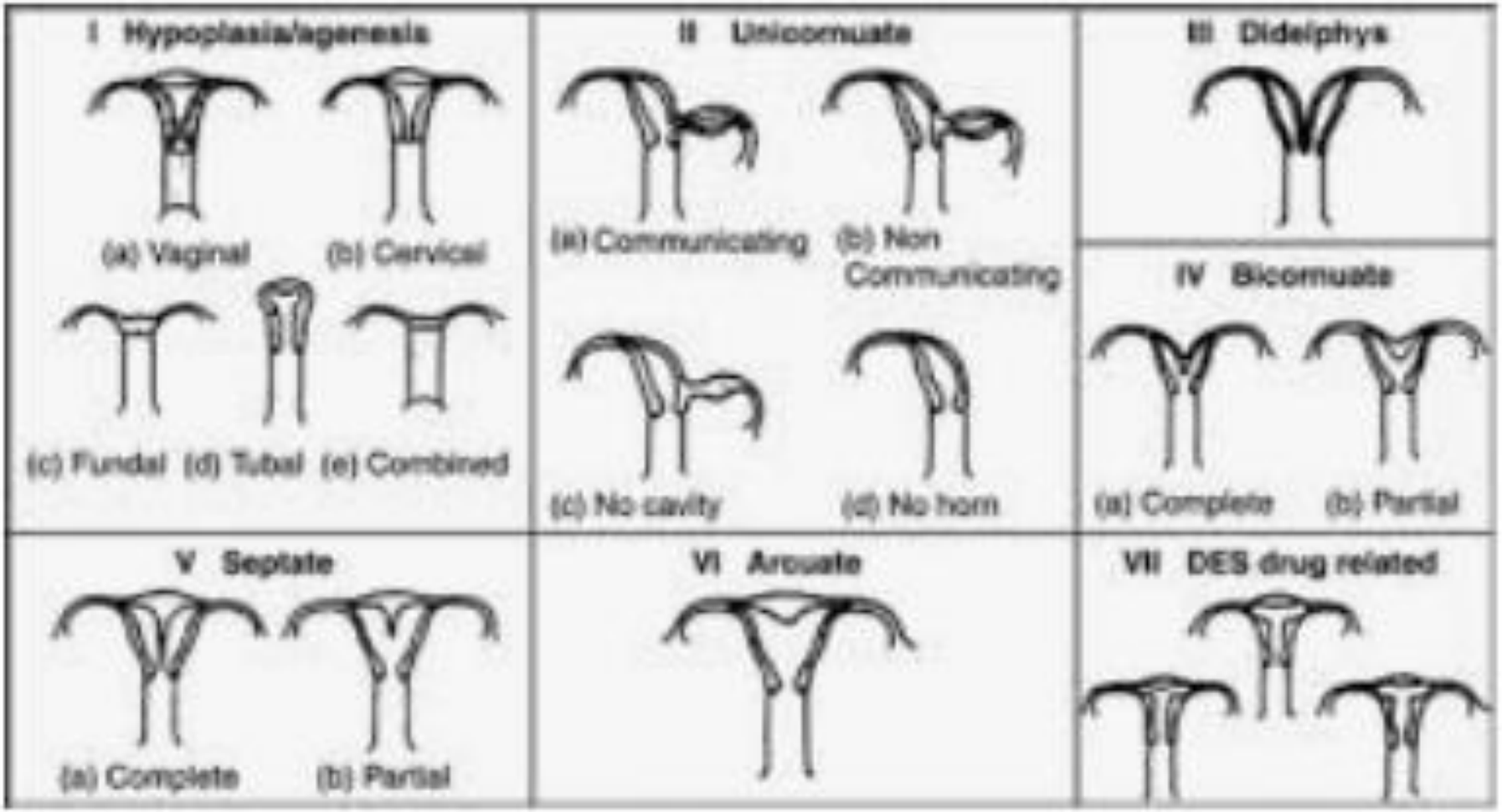
ESHRE/ESGE classification
Female genital tract anomalies

	Uterine anomaly		Cervical/vaginal anomaly	
	Main class	***Sub-class***	***Co-existent class***	
U0	Normal uterus		***C0***	*Normal cervix*
U1	Dysmorphic uterus	**a.** T-shaped **b.** Infantilis **c.** Others	***C1***	*Septate cervix*
U2	Septate uterus	**a.** Partial **b.** Complete	***C2***	*Double 'normal' cervix*
U3	Bicorporeal uterus	**a.** Partial **b.** Complete **c.** Bicorporeal septate	***C3***	*Unilateral cervical aplasia*
U4	Hemi-uterus	**a.** With rudimentary cavity (communicating or not horn) **b.** Without rudimentary cavity (horn without cavity/no horn)	***C4***	*Cervical aplasia*
U5	Aplastic	**a.** With rudimentary cavity (bi- or unilateral horn) **b.** Without rudimentary cavity (bi- or unilateral uterine remnants/aplasia)		
			V0	*Normal vagina*
			V1	*Longitudinal non-obstructing vaginal septum*
			V2	*Longitudinal obstructing vaginal septum*
			V3	*Transverse vaginal septum and/or imperforate hymen*
			V4	*Vaginal aplasia*
U6	Unclassified malformations			


Class U0/normal uterus
Class U1/Dysmorphic Uterus
a. T-shaped
b. Infantilis
c. Others
Class U2/septate uterus
a. Partial
b. Complete
Class U3/Bicorporeal Uterus
a. Partial
b. Complete
c. Bicorporeal septate
Class U4/Hemi Uterus
a. With rudimentary cavity
b. Without rudimentary cavity
Class U5/Aplastic Uterus
a. With rudimentary cavity
b. Without rudimentary cavity
Class U6/Unclassified Cases


I Hypoplasia/agenesis
(a) Vaginal
(b) Cervical
(c) Fundal
(d) Tubal
(e) Combined
II Unicornuate
(a) Communicating
(b) Non Communicating
(c) No cavity
(d) No horn
III Didelphys
IV Bicornuate
(a) Complete
(b) Partial
V Septate
(a) Complete
(b) Partial
VI Arcuate
VII DES drug related

Distribution of Specific Anomalies

Septate uterus	35%
Bicornuate uterus	26%
Arcuate uterus	18%
Unicornuate uterus	10%
Uterus didelphys	8%

Obstet Gynecol. 2005 Sep;106(3):553-6.

Transvaginal ultrasonography of the cervix to predict preterm birth in women with uterine anomalies.

Airoldi J[1], Berghella V, Sehdev H, Ludmir J.

Author information

Abstract

OBJECTIVE: Women with uterine anomalies have higher rates of preterm birth, but the reason for this has not been elucidated. Transvaginal ultrasound examination has been shown to be an accurate test for the prediction of preterm birth but has not been studied specifically in this population.

METHODS: Pregnant women with uterine anomalies were followed prospectively with transvaginal ultrasound examination of the cervix, performed between 14 and 23 6/7 weeks of gestation. A short cervical length was defined as less than 25 mm of cervical length. The primary outcome was spontaneous preterm birth, defined as birth at less than 35 weeks.

RESULTS: Of the 64 pregnancies available for analysis, there were 28 with a bicornuate uterus, 13 with a septate uterus, 11 with a uterine didelphys, and 12 with a unicornuate uterus. The overall incidence of spontaneous preterm birth at less than 35 weeks was 11%. Of the 10 (16%) women with a short cervical length, 5 (50%) had spontaneous preterm birth. Of the 54 women without a short cervical length, only 2 (4%) had a spontaneous preterm birth. The sensitivity, specificity, and positive and negative predictive values of a short cervical length for spontaneous preterm birth were 71%, 91%, 50%, and 96%, respectively (relative risk 13.5, 95% confidence interval 3.49-54.74). Of the 7 women with both short cervical length and preterm birth, all uterine subtypes were represented except septate uterus.

CONCLUSION: A short cervical length on transvaginal ultrasonography in women with uterine anomalies has a 13-fold risk for preterm birth. Unicornuate uterus had the highest rate of cervical shortening and preterm delivery.

LEVEL OF EVIDENCE: II-2.

Obstet Gynecol Surv. 2017 Apr;72(4):235-241. doi: 10.1097/OGX.0000000000000422.

Cerclage Use: A Review of 3 National Guidelines.

Sperling JD[1], Dahlke JD[2], Gonzalez JM[3].

EVIDENCE ACQUISITION: We performed a descriptive review of 3 national guidelines on cerclage: The American Congress of Obstetricians and Gynecologists Practice Bulletin on "Cerclage for the Management of Cervical Insufficiency," Green-top Guideline from the Royal College of Obstetricians and Gynaecologists entitled "Cervical Cerclage," and the Society of Obstetricians and Gynaecologists of Canada Clinical Practice Bulletin entitled "Cervical Insufficiency and Cervical Cerclage."

- ACOG, RCOG and SOGC guidelines agree that mullerian anomalies are risk factor for cervical insufficiency

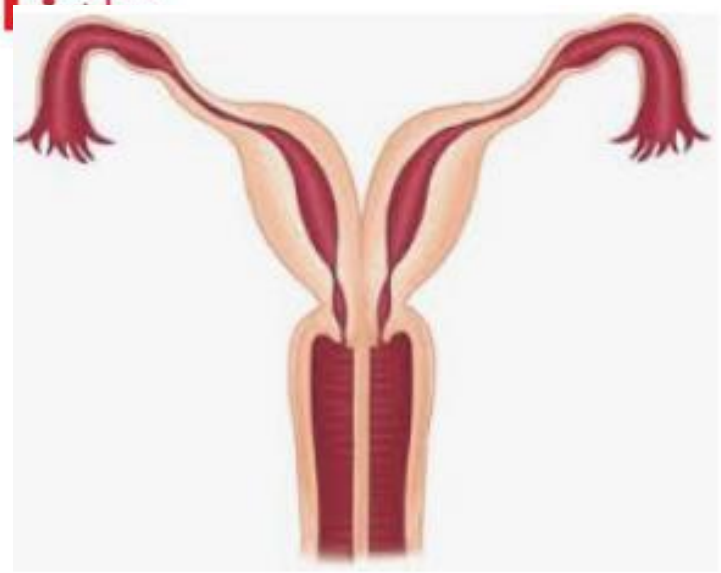
- ACOG and RCOG guidelines agree that cerclage is not advised for women with mullerian anomalies

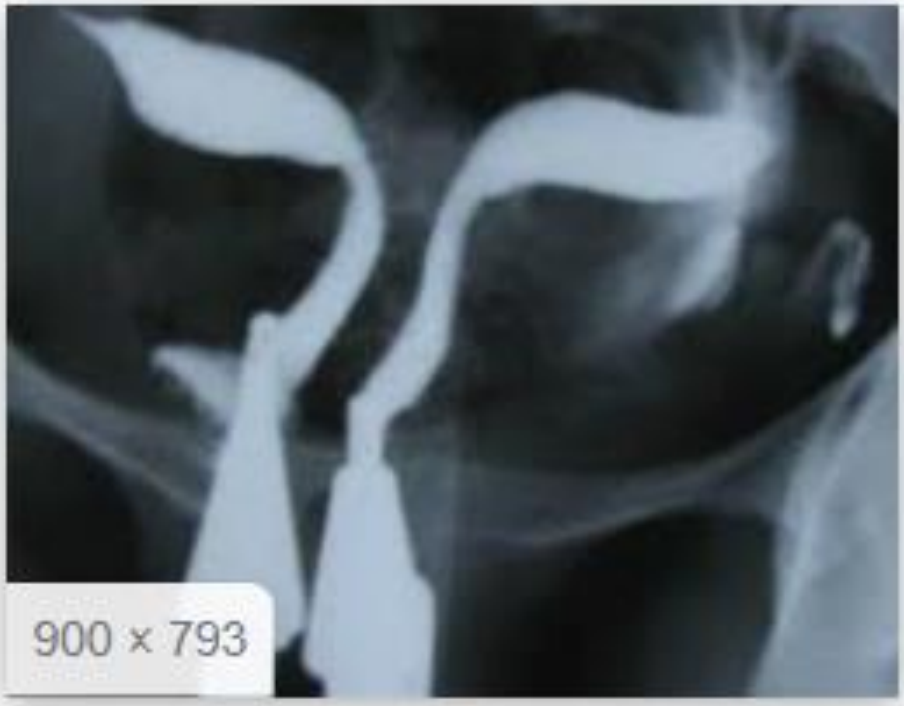
Uterus Didelphys (Double Uterus)

- Complete lack of fusion of the two müllerian ducts results in duplication of the corpus, cervix, and upper vagina

- Pregnancy is associated with an increased risk of miscarriage, malpresentations, and preterm labor

Uterus Didelphys





Unicornuate Uterus

- A failure of development in one müllerian duct

- An increase in endometriosis and in obstetrical complications (early spontaneous miscarriage, EP, abnormal presentations, IUGR, and PTL)

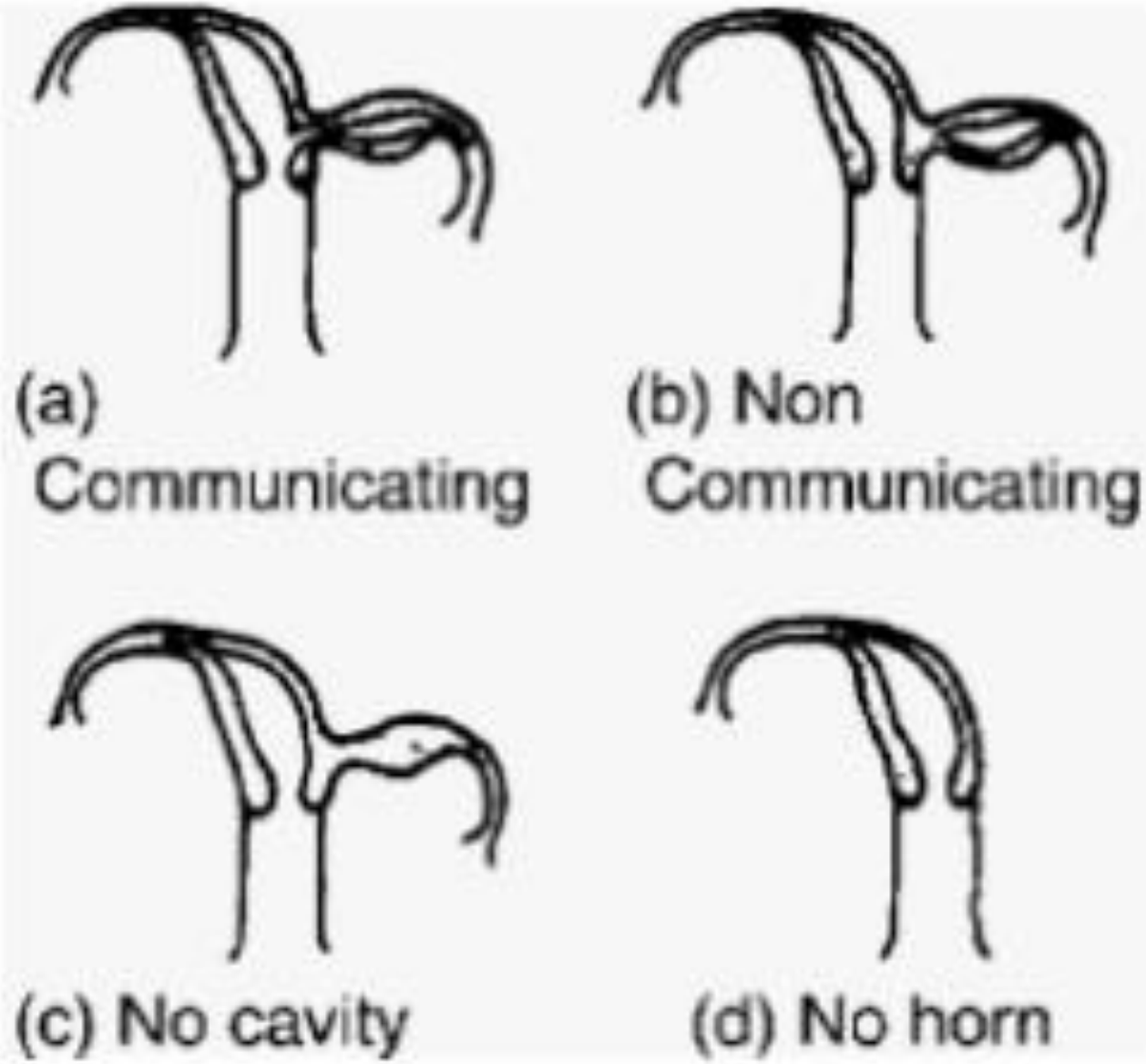
- Most rudimentary horns are asymptomatic because they are noncommunicating, and the endometrium is not functional

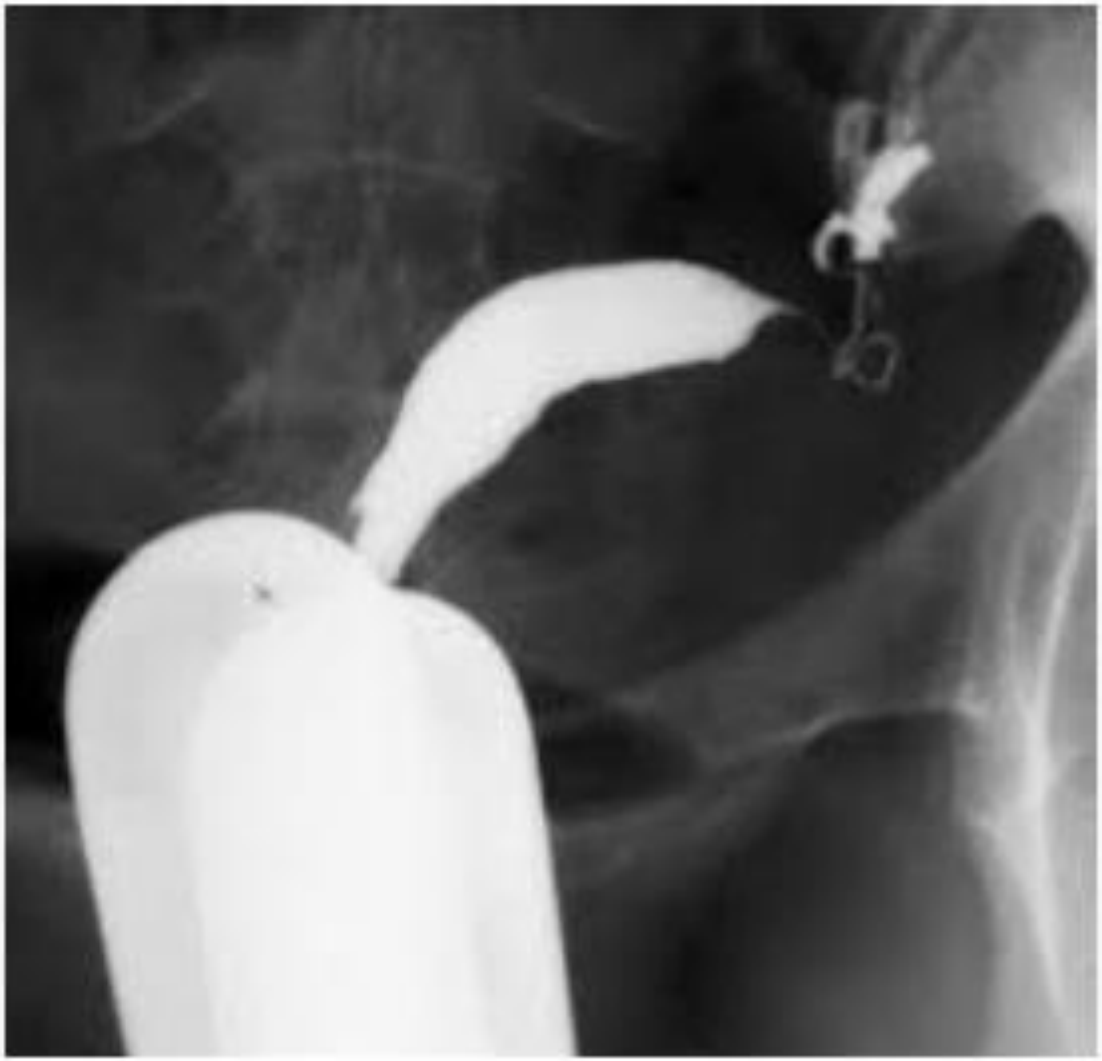
- **Because of the potential for problems, prophylactic removal of the rudimentary horn is recommended when it is encountered during a surgical procedure**.
- High incidence (40%) of urinary tract anomaly (usually of the kidney)
- **Surgical reconstructive procedures do not improve obstetrical outcomes; however, cervical cerclage may be beneficial when indicated**

Unicornuate

- The physician should observe closely for signs and symptoms of preterm labor

- Cervical incompetence is likely less common than previously suggested, yet if present, cerclage should be considered as indicated





Perinatology

Fertility and Sterility

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May 2009 Volume 91, Issue 5, Pages 1886–1894

Pregnancy outcomes in unicornuate uteri: a review

David Reichman, M.D.[a], Marc R. Laufer, M.D.[b,c,*], Barrett K. Robinson, M.D., M.P.H.[a]

Result(s)

Our review revealed 20 studies of varying size and design that had commented on pregnancy outcomes in unicornuate uteri. These studies ranged in date from 1953 to 2006 and from a sample size of one to 55 patients. In total, we examined 290 women with unicornuate uterus reported in the literature. Of those patients, 175 conceived, to carry a total of 468 pregnancies. Incidence data in the literature reveal that unicornuate uterus occurs in 1:4020 women in the general population; the anomaly, however, is significantly more common in infertile women, as in women with repeated poor outcomes. Our review revealed rates of 2.7% ectopic pregnancy, 24.3% first trimester abortion, 9.7% second trimester abortion, 20.1% preterm delivery, 10.5% intrauterine fetal demise, and 49.9% live birth.

Conclusion(s)

Unicornuate uterus is a Mũllerian anomaly with prognostic implications for poorer outcomes during pregnancy. The rates of adverse outcomes have likely been historically overestimated. Although it is unclear whether interventions before conception or early in pregnancy such as resection of the rudimentary horn and prophylactic cervical cerclage decidedly improve obstetrical outcomes, current practice suggests that such interventions may be helpful. Women presenting with a history of this anomaly should be considered high-risk obstetrical patients.

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< Previous Article | July 1992 Volume 58, Issue 1, Pages 88–93 | Next Article >

A comparison of the reproductive outcome between women with a unicornuate uterus and women with a didelphic uterus**

Dean M. Moutos, M.D., Marian D. Damewood, M.D., William D. Schlaff, M.D. †, John A. Rock, M.D. ‡
Department of Gynecology and Obstetrics, Division of Reproductive Endocrinology, The Johns Hopkins Medical School, Baltimore, Maryland

Results

Twenty-nine women with a unicornuate uterus and 25 women with a didelphic uterus were identified. Twenty women with a unicornuate uterus produced a total of 40 pregnancies, whereas 13 women with a didelphic uterus produced a total of 28 pregnancies. The 33% spontaneous abortion rate in the unicornuate group was not significantly different from the 23% rate in the didelphic group. The proportion of pregnancies resulting in preterm delivery, term delivery, and living children was similar in both groups.

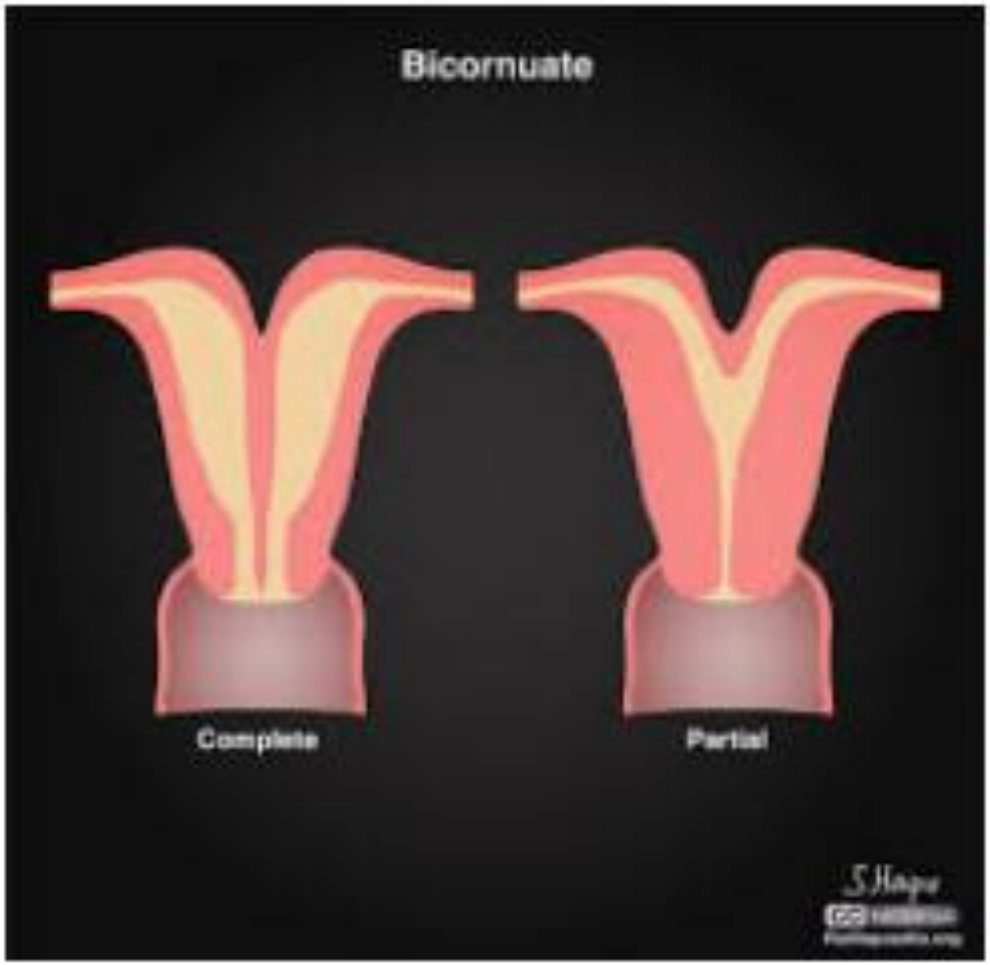
Conclusions

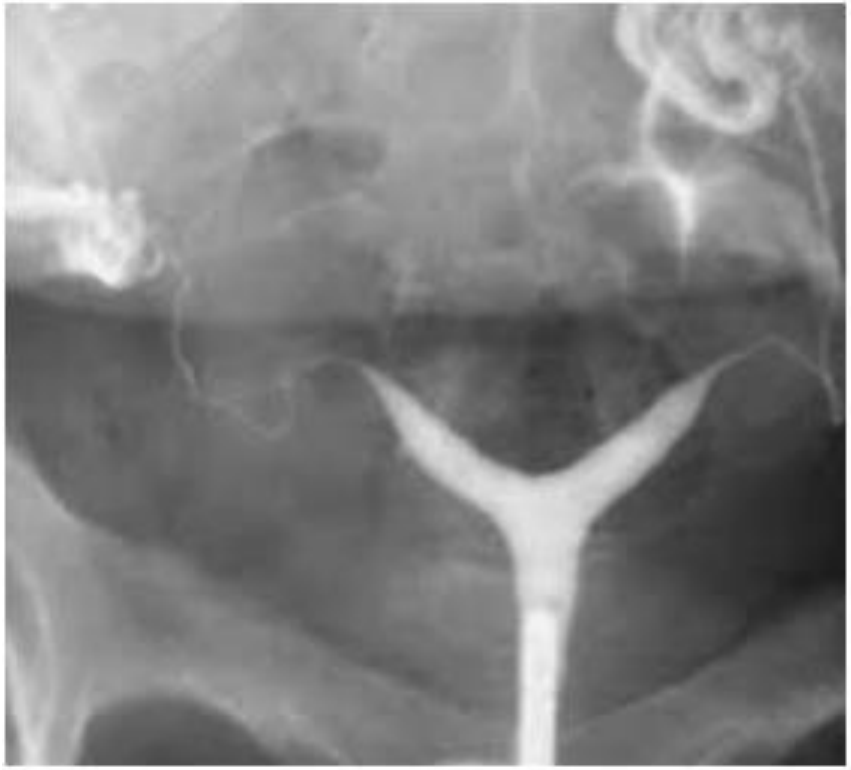
The reproductive performance of women with a unicornuate uterus is similar to the performance of women with a didelphic uterus.

- **There is insufficient information to support recommendation of placement of a cervical cerclage in the absence of cervical incompetence**

Bicornuate Uterus

- Partial rather than complete lack of fusion of the two müllerian ducts, producing a single cervix with a varying degree of separation in the two uterine horns
- Relatively common
- Pregnancy outcome : near normal
- Even with a history of repeated poor pregnancy outcomes that are thought to be related to the anomaly, surgical metroplasty is rarely considered
- **The cervical length should be assessed during pregnancy due to an association between bicornuate uterus and cervical insufficiency**





www.perinatalrc.sums.ac.ir

J Reprod Infertil. 2011 Oct;12(4):277-9.

The role of cervical cerclage in pregnancy outcome in women with uterine anomaly.

Yassaee F[1], Mostafaee L.

METHODS: In this historical cohort study, 40 pregnant women with uterine anomaly were investigated for outcomes of pregnancy in regards to preterm and term deliveries. The participants were divided into two groups: the case group included 26 women with uterine anomaly for whom cervical cerclage was done and the control group was composed of 14 women with uterine anomaly in whom cervical cerclage was not performed. Comparison between the two groups was done and the data were analyzed by the use of chi square, Fisher's exact test and t-test with SPSS software (version 11) and $p < 0.05$ was considered significant.

RESULTS: In patients with bicornuate uterus and cervical cerclage, term delivery occurred in 76.2% and preterm delivery in 23.8%. In patients with bicornuate uterus and without cervical cerclage, term delivery occurred in 27.3% and preterm delivery in 72.7% ($p < 0.05$). In patients with arcuate uterus and cervical cerclage, term and preterm deliveries were equal (50% vs. 50%), but in patients with arcuate uterus and without cervical cerclage, term and preterm deliveries occurred in 66.6% and 33.3% of the participants, respectively.

CONCLUSION: Cervical cerclage is an effective procedure in bicornuate uterus for the prevention of preterm deliveries but it has no effect on the outcome of pregnancy in arcuate uterus.

Type of anomaly	Pregnancy outcome				
	With cerclage		Without cerclage		Total
	Term delivery	Preterm delivery	Term delivery	Preterm delivery	
Bicornuate	16 (76.2%)	5 (23.8%)	3 (27.3%)	8 (72.7%)	32 (80%)
Unicornuate	2 (66.6%)	1 (33.3%)	--	--	3 (7.5%)
Arcuate	1 (50%)	1 (50%)	2 (66.6%)	1 (33.3%)	5 (12.5%)

The Septate Uterus

- The most common uterine anomaly (35–90% of uterine malformations)
- Partial lack of resorption of the midline septum between the two müllerian ducts
- The complete septate uterus is associated with a high risk of spontaneous miscarriage, PTL, IUGR, and breech presentation
- Outcomes are excellent with treatment by hysteroscopy

- Posttreatment miscarriage rates are approximately 10% in contrast to the 21–44% pretreatment

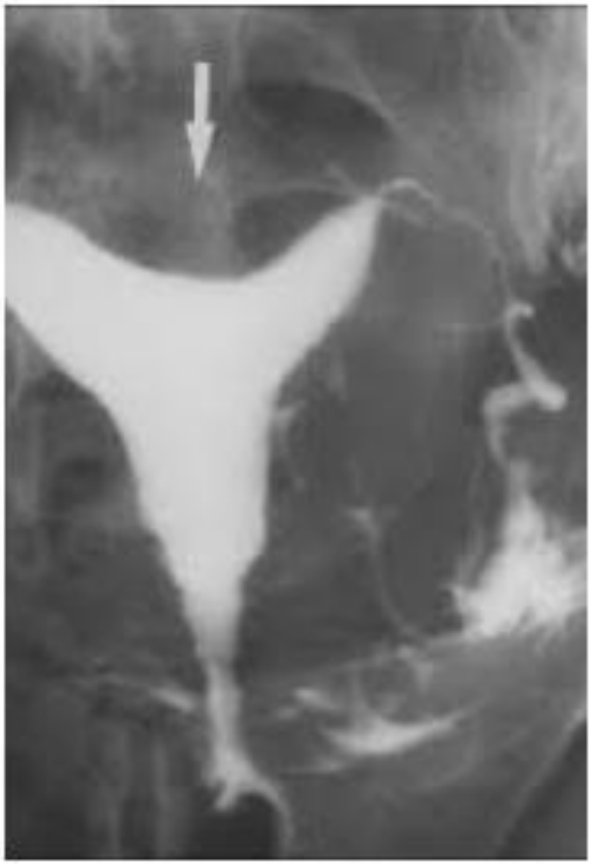
- Many women with septa are asymptomatic and have good pregnancy outcomes.

- **A cervical septum should be left in place so as not to promote cervical incompetence**

Arcuate uterus

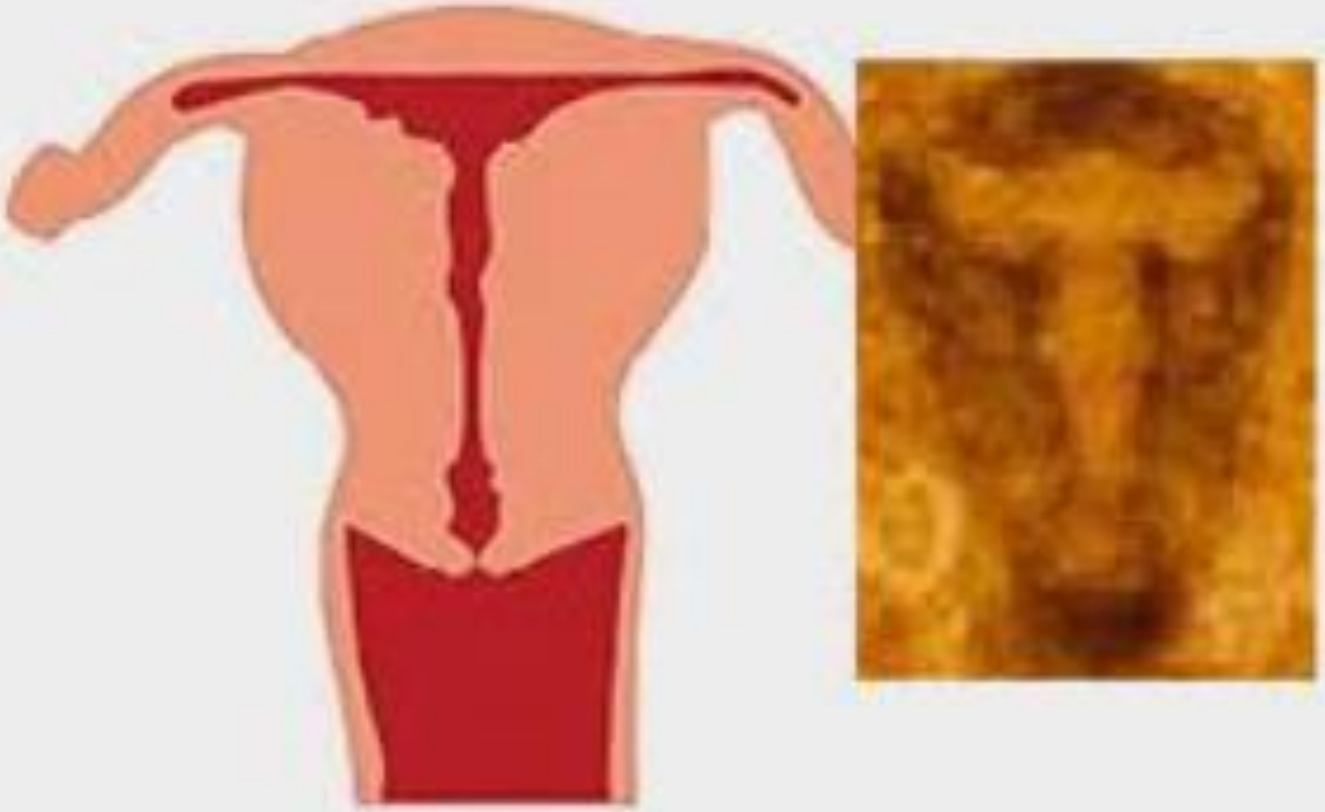
- A normal variant and is not associated with adverse impact on reproductive outcome
- A surgical procedure is not indicated for the arcuate uterus

Arcuate uterus



The Diethylstilbestrol-Associated Anomaly

- A variety of anomalies, ranging from the hypoplastic T-shaped uterus to irregular cavities with adhesions
- Women with uterine abnormalities usually also have cervical defects
- The chance of term pregnancy is decreased because of higher risks of EP, spontaneous miscarriage, and PTL
- **An incompetent cervix is common**
- **No treatment is available beyond cervical cerclage**



Class VII: Diethylstilbestrol
(DES) Drug Related

Take home message

- Prophylactic cerclage is not indicated
- Risk factor for cervical insufficiency
- Serial assessment of cervical length by TVS and an expert
- More RCTs are needed