

Quality in Action Summer Webinar Series

Session 3: Ectopic Pregnancy Presentation and Management



Advancing ob-gyn care for all.

September 3, 2026

Before We Get Started



This webinar will be recorded



If you need help during the call, please private chat an ACOG staff member



Submit your questions throughout this session using the Q&A box



Any questions following this webinar can be sent to obgynsafety@acog.org

Who are we?

Quality
in **Action**

AN ACOG
FOUNDATION
PATIENT SAFETY
ORGANIZATION

A Partner in Quality and Patient Safety

Combining ACOG's trusted expertise with real-world services to help hospitals and health systems deliver safer, more equitable care.

- Safety event review
- Plan to support review of patient safety work
- Tailored support for frontline teams
- Designed for measurable impact

Let's improve ob-gyn care—together.

Upcoming Sessions!



Join us!!!

**Beyond Diagnosis:
Respectful and Equitable
Care in the Management
of Ectopic Pregnancy**

**September 10th, 2026
3:00-4:00pm ET**

Session 4 (CE/CME)

Continuing Medical Education

We are excited to offer **CME credit** to attendees of this live session

To receive your certificate:

- 1. Complete the evaluation following this activity**
- 2. You need to create an ACOG account to complete the survey**

ACCREDITATION INFORMATION

ACCME Accreditation

The American College of Obstetricians and Gynecologists is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMA PRA Category 1 Credit(s)[™]

The American College of Obstetricians and Gynecologists designates this live activity for a maximum of **1 AMA PRA Category 1 Credits[™]**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

College Cognate Credit(s)

The American College of Obstetricians and Gynecologists designates this enduring activity for a maximum of **1 Category 1 College Cognate Credits**. The College has a reciprocity agreement with the AMA that allows AMA PRA Category 1 Credits[™] to be equivalent to College Cognate Credits.

Continuing Education Contact Hours

We are excited to offer **continuing education (CE) Contact Hours** to attendees of this live session.

To receive your certificate:

- 1. Attend at least 60 minutes of the live activity**
- 2. Complete the post-webinar evaluation linked in the follow-up email**

Certificates will be sent via email in 2 weeks

ACCREDITATION INFORMATION

This activity is approved by the Continuing Education Approval Program of the National Association of Nurse Practitioners in Women's Health for 1 continuing education contact hour, including 0 hours of pharmacology content. **NPWH Activity number 26-21.**

The Continuing Education Approval Program of the National Association of Nurse Practitioners in Women's Health, is accredited as a provider of continuing by the **California State Board of Nursing, Provider Number CEP 13411**

Conflict of Interest

This activity has not received any commercial support.

The faculty of this presentation and members of the planning committee have no financial relationships with any ineligible companies

Disclosure Policy

The faculty, committee members, and staff who are in position to control the content of this activity are required to disclose to ACOG and to learners any financial relationship(s) of the individual that have occurred within the last 24 months with any ineligible entities whose products are related to the continuing education content. Financial relationships are defined by remuneration in any amount from the ineligible entities in the form of grants; research support; consulting fees; salary; ownership interest (e.g., stocks, stock options, or ownership interest excluding diversified mutual funds); honoraria or other payments for participation in speakers' bureaus, advisory boards, or boards of directors; or other financial benefits. The intent of this disclosure is not to prevent planners with relevant financial relationships from planning or delivering content, but rather to provide learners with information that allows them to make their own judgments of whether these financial relationships may have influenced the educational activity with regard to exposition or conclusion. ACOG has reviewed all disclosures and resolved or managed all identified conflicts of interest, as applicable.

Today's Speakers



Jessica Reid, MD, MCR, FACOG

Ectopic Pregnancy Presentation and Management

DATE: September 3, 2026 PRESENTED BY: Jessica Reid MD, MCR Associate Professor of OBGYN, OHSU



Disclosures

- None

Objectives

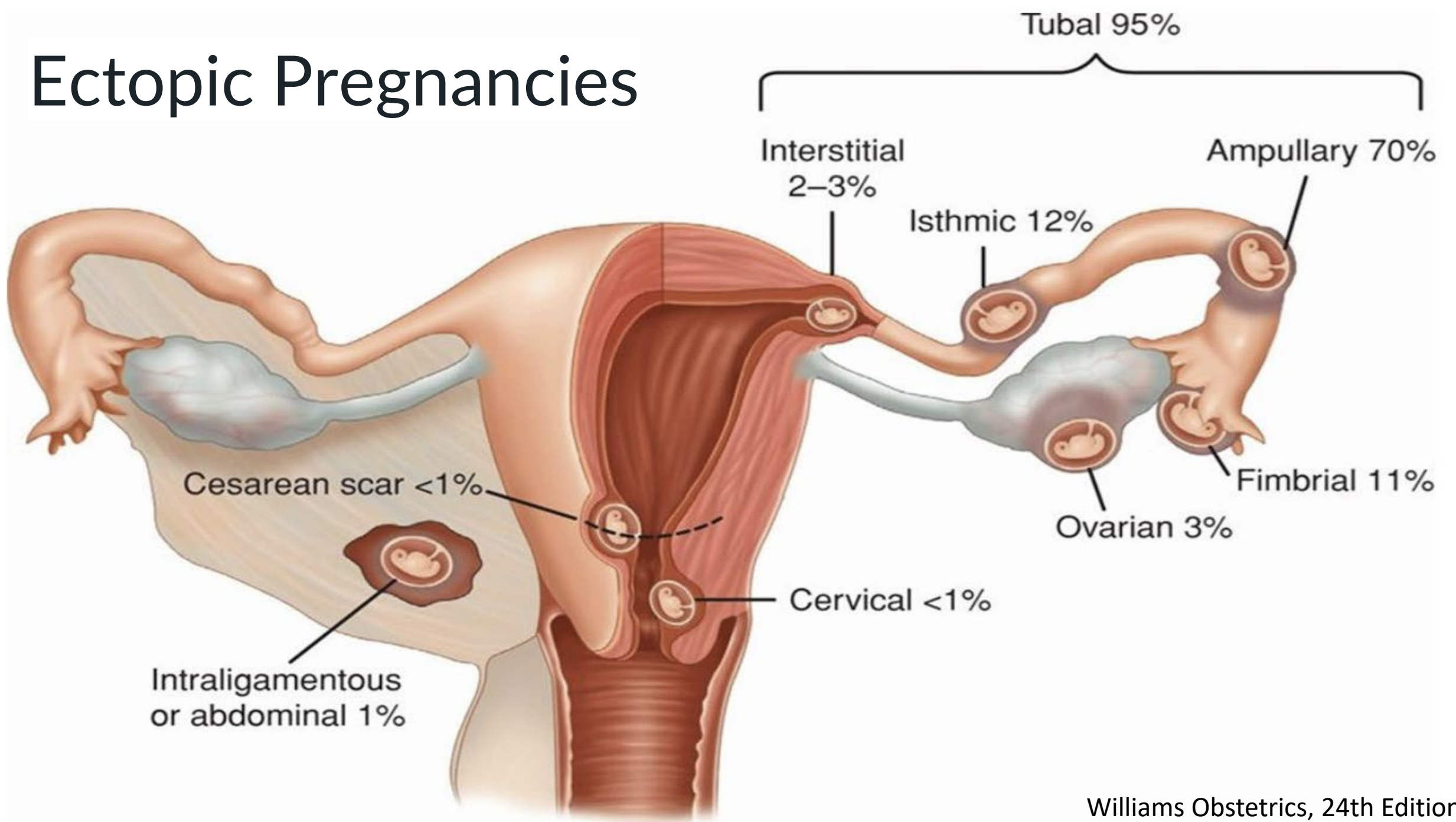
By the end of this webinar, participants will be able to:

1. Recognize range of ectopic pregnancy **presentations**.
2. Understand **diagnostic considerations** based on pregnancy location and size.
3. Apply general principles to differentiate which patients require **emergent surgical care** and which are appropriate for **outpatient or non-surgical management**.
4. Describe broad **treatment approaches** used in different clinical contexts for different types of ectopic pregnancy.
5. Discuss factors that support **safe and effective decision-making** throughout the care pathway.

Ectopic Pregnancy

- Potentially life-threatening
- Most occur in fallopian tubes
- Non-tubal locations are less common, but higher risk
- Early recognition improves outcomes and expands treatment options

Ectopic Pregnancies



Nontubal Ectopic Pregnancy Sites, Risk Factors, and Incidence

	Location of implantation	Incidence*	Risk Factors**
Cesarean scar ectopic	Hysterotomy scar Myomectomy scar (intramural ectopic)	~1/1,800-2,600 pregnancies	Prior cesarean Prior myomectomy
Cervical ectopic	Endocervical canal (ECC)	~1/2,500 – 18,000 pregnancies	ART/IVF Prior uterine or cervical procedures Anatomic abnormalities DES exposure IUD in situ
Interstitial ectopic	Interstitial portion of fallopian tube	Limited data available	Same as tubal ectopic
Cornual ectopic	One horn of a bicornuate uterus Rudimentary horn of a unicornuate uterus One side of a septate uterus	Limited data available	Mullerian anomaly
Ovarian ectopic	Ovarian stroma	Limited data available	Same at tubal ectopic
Abdominal ectopic	Peritoneal cavity Primary implantation vs. Secondary from aborted tubal or other primary ectopic pregnancy	1/10,000 births	Same as tubal ectopic

How do ectopic pregnancies present?

- Asymptomatic with positive pregnancy test
- Vaginal bleeding and/or pelvic pain
- Adnexal mass on imaging
- Hemodynamic instability due to rupture



Non-tubal ectopic pregnancy

- Presentations vary by implantation site
 - Nontubal pregnancies can cause uterine rupture and catastrophic hemorrhage
- Cesarean scar ectopic pregnancy (CSEP): Most are diagnosed in first trimester with a mean GA of 7 weeks.
 - 1/3 asymptomatic
 - 1/3 painless vaginal bleeding
 - 1/4 present with pain with or without bleeding.
 - Rare: uterine rupture and hemoperitoneum, occurring more frequently when not diagnosed in a timely manner
 - PAS spectrum

Diagnostic approach

- Assess stability first
 - Vital signs
- Abdominal and/or pelvic exam
 - Assess for peritoneal signs “surgical abdomen”
 - Gentle pressure during bimanual exam (may or may not feel a mass)
 - Cervical ectopic: cervix may appear hyperemic, bulging, engorged (os closed)
- Positive urine pregnancy test
- Transvaginal ultrasound is primary imaging tool

Serum hCG level

- Serum hCG discriminatory zone: as high as 3,500mIU/mL
- A single hCG level cannot diagnose pregnancy location or if appropriate growth
- When to trend serial serum hCG
 - when diagnosis uncertain (PUL) in a stable patient
 - Helps determine if pregnancy is normal or abnormal
 - Ectopic follow up/assessment of methotrexate success

Serum hCG	Predictive Probability of seeing GS on Ultrasound
1500 mIU/mL	80.4%
2000 mIU/mL	91.2%
> 3000 mIU/mL	99%

HCG trend by itself does not diagnose or rule out ectopic pregnancy

Imaging

- Transvaginal pelvic ultrasound
- MRI rarely indicated, but may be helpful for surgical planning with non-tubal ectopic pregnancy

Tubal ectopic pregnancy

- Empty uterus (*endometrium is still decidualized*)
- Adnexal mass
 - Definite ectopic pregnancy: Extrauterine gestational sac with yolk sac and/or embryo (+/- cardiac activity)
 - Probable ectopic pregnancy: Inhomogeneous adnexal mass or extrauterine sac-like structure
 - Positive predictive value 80%

ACOG PB 193 Tubal Ectopic Pregnancy (2018)

Barnhart et al 2011 Fertility and Sterility





Pregnancy of Unknown Location (PUL)

- Addressed in Session 2
- Remember to ask
 - LMP
 - Is pregnancy desired?

Important Considerations

- Serum hCG level does not predict the likelihood of ectopic rupture – if clinical findings are suspicious for ectopic pregnancy, ultrasound is indicated even if hCG level is low.

Likelihood of pregnancy outcomes by hCG level in patients with an empty uterus on ultrasound:

Serum hCG (PUL)	Ectopic Pregnancy	Nonviable IUP	Normal IUP
2000 to 3000 mIU/mL	32.8%	65.5%	1.7%
>3000 mIU/mL	33.2%	66.4%	0.5%

- Consider diagnostic/therapeutic uterine evacuation when US is non-diagnostic (PUL) and pregnancy is undesired or hCG trend demonstrates abnormal IUP.

How to diagnose Cesarean Scar Ectopic Pregnancy (CSEP) on ultrasound

Voluson
E10

20Hz/14.6cm
55°/1.8
1 Trim./OB
HD Res 8.30 - 4.60
Gn 2
C6/M7
FF2/E2
SRI II 4/CRI 2

1. An empty uterine cavity and endocervix

Voluson
E10

SCAR

17Hz/ 7.0cm
130°/1.5
1 Trim. Rout./OB
HI M PI 11.70 - 4.10
Gn -10
C7/M15
P5/E3
SRI II 4

2. Placenta, gestational sac, or
both **embedded** in the hysterotomy
scar

3. Gestational sac that fills the scar
“niche”

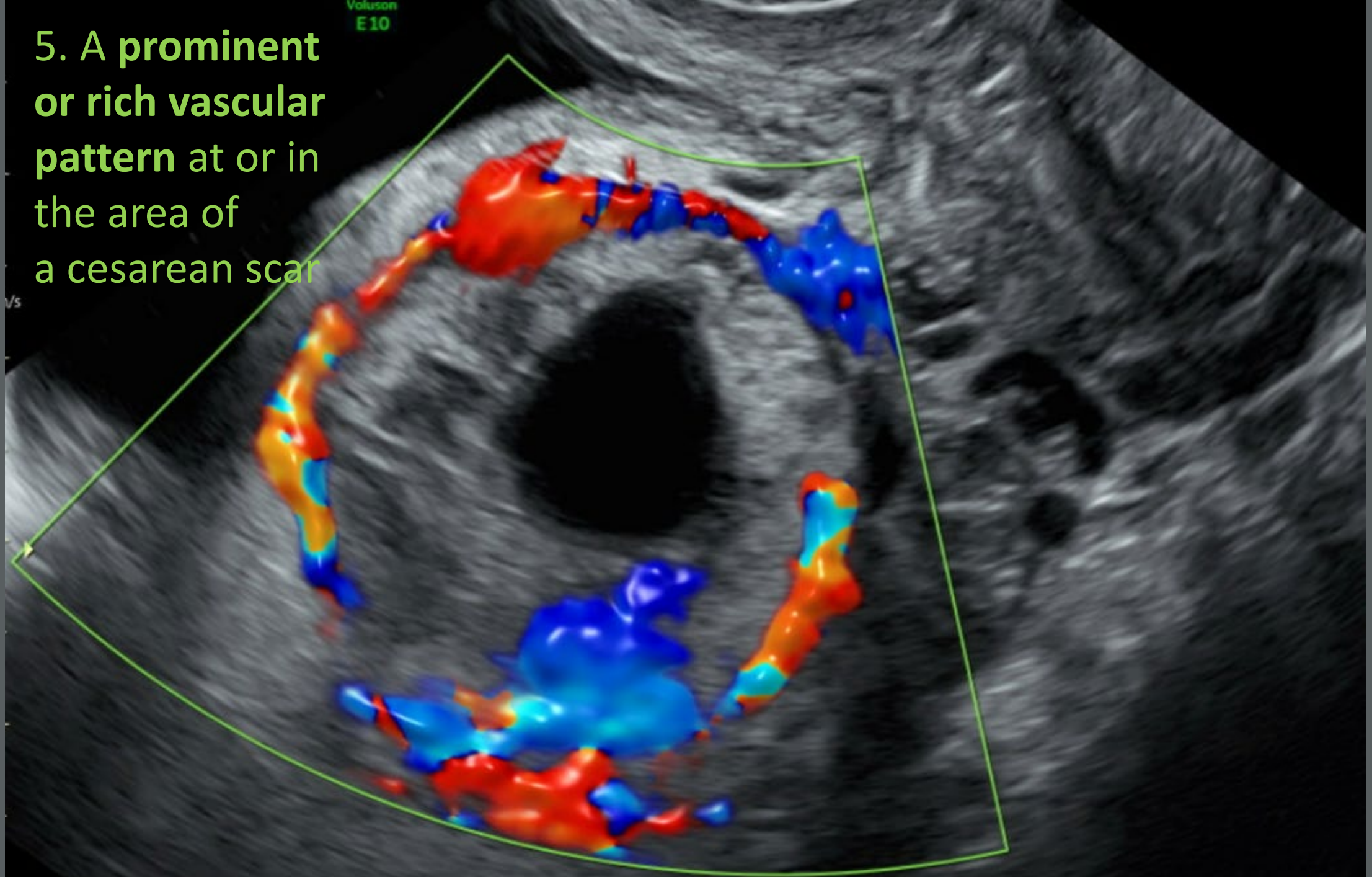
Voluson
E10

28Hz/ 5.8cm
75°/1.3
1 Trim. Rout./OB
HI M PI 11.70 - 4.10
Gn -14
C7/M15
P5/E3
SRI II 4

4. A thin (1-3 mm)
or **absent myometrial
layer** between
the gestational sac
and bladder

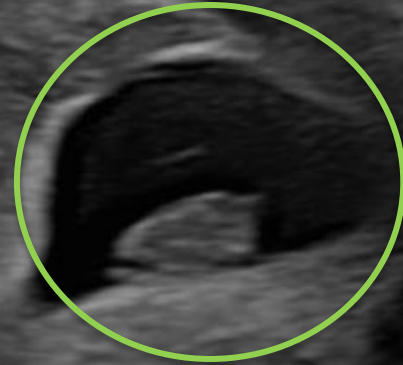
1 D 0.17cm

5. A **prominent or rich vascular pattern** at or in the area of a cesarean scar

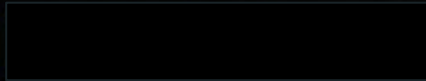


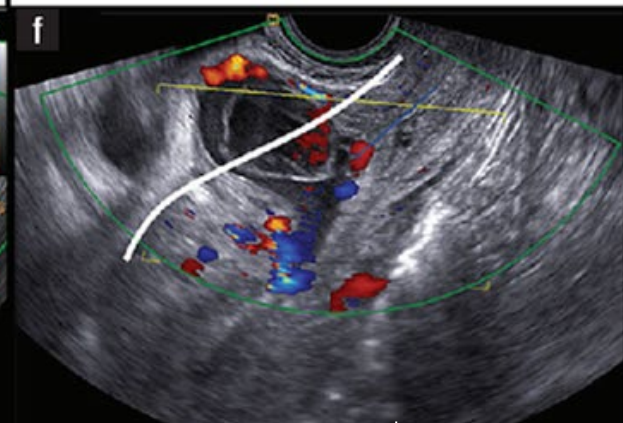
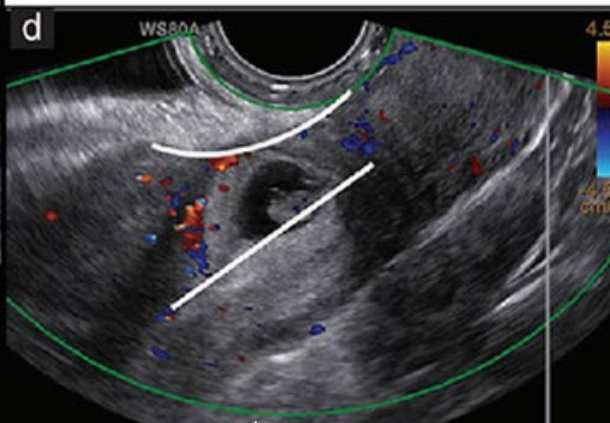
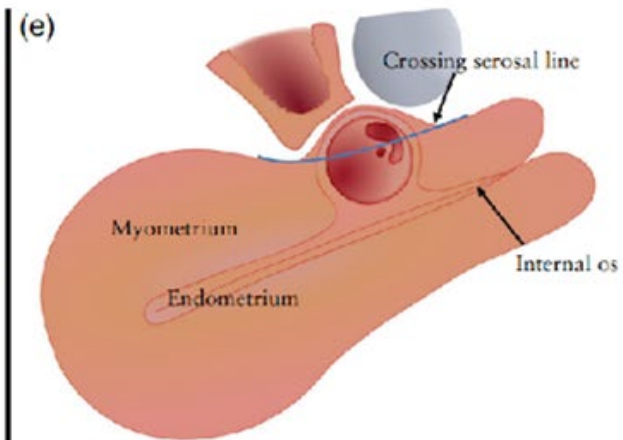
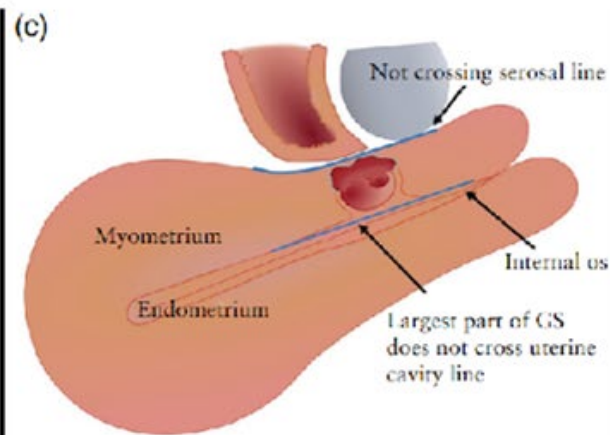
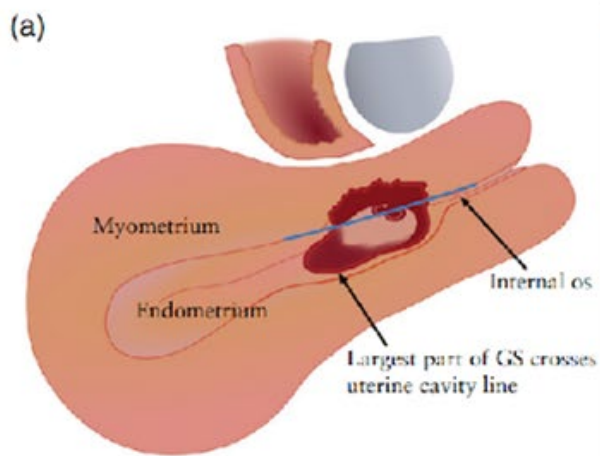
Voluson
E10

20112/14.0cm
55°/1.8
1 Trim./OB
HD Res 8.30 - 4.60
Gn 2
C6/M7
FF2/E2
SRI II 4/CRI 2



6. An embryonic or fetal pole, yolk sac, or both with or without fetal cardiac activity





Type 1 (Endogenic)

- "On the scar" and growing into the cavity

Type 2 (Exogenic)

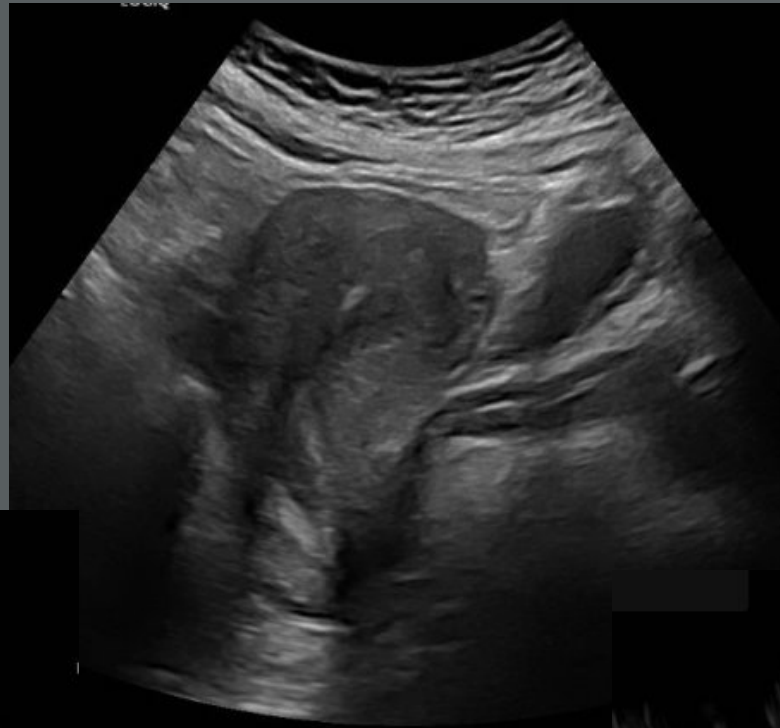
- Deeply implanted "in the niche" and growing towards the bladder

Common Mimickers of CSEP

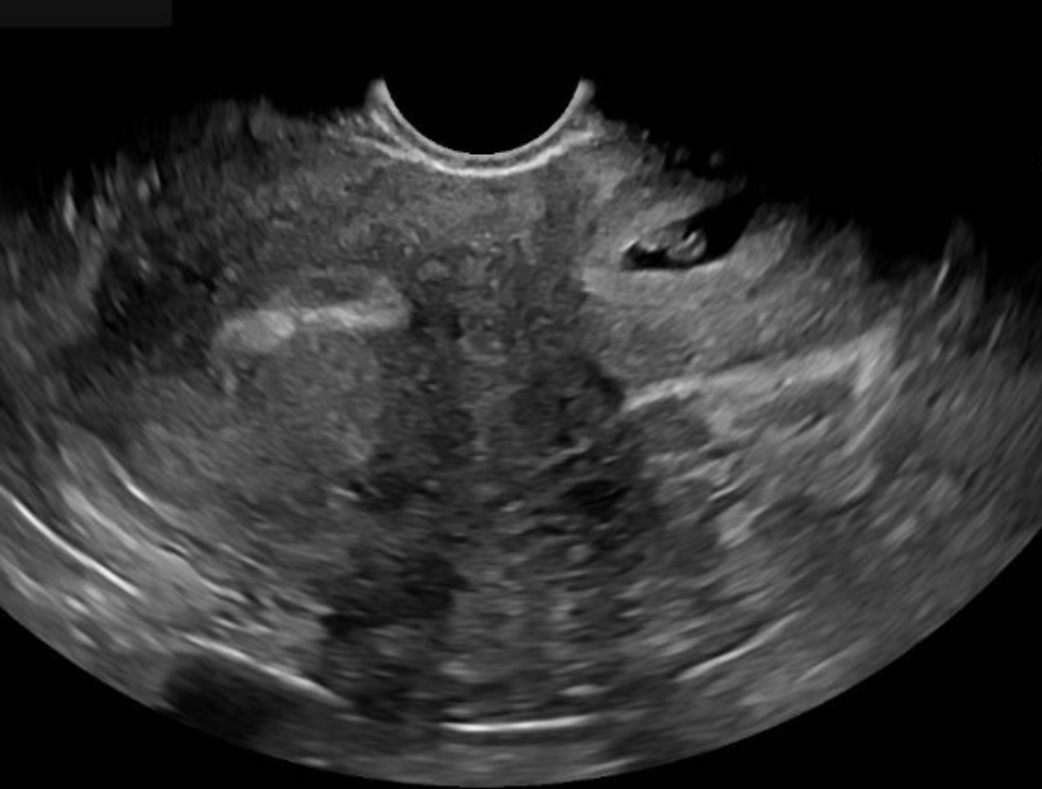
- Spontaneous abortion in transit
- Low implantation of an intrauterine pregnancy
- Cervical ectopic

Referral to an experienced center for a second opinion is preferred over delayed follow up

Cervical Ectopic Pregnancy



UTERUS LONG

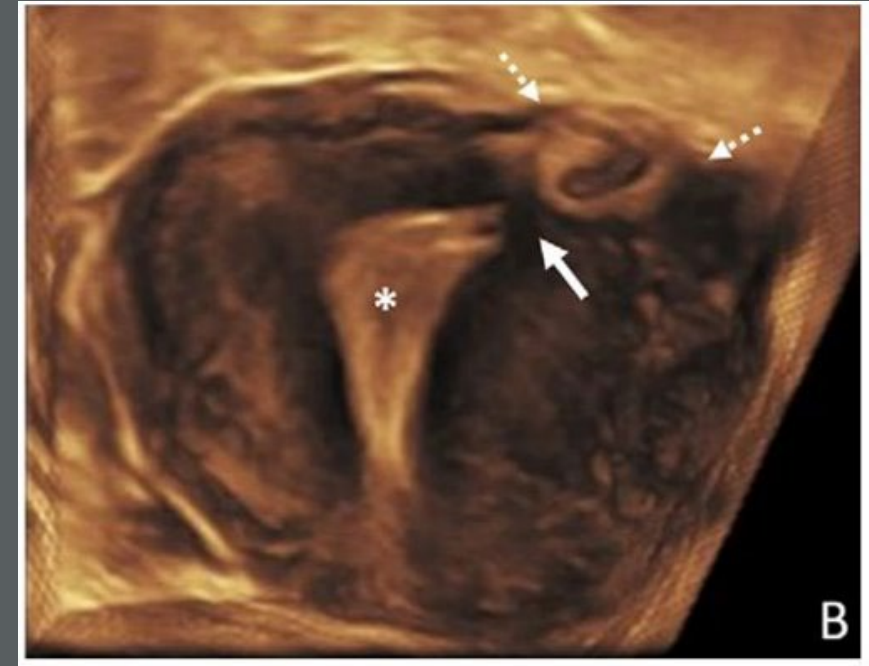
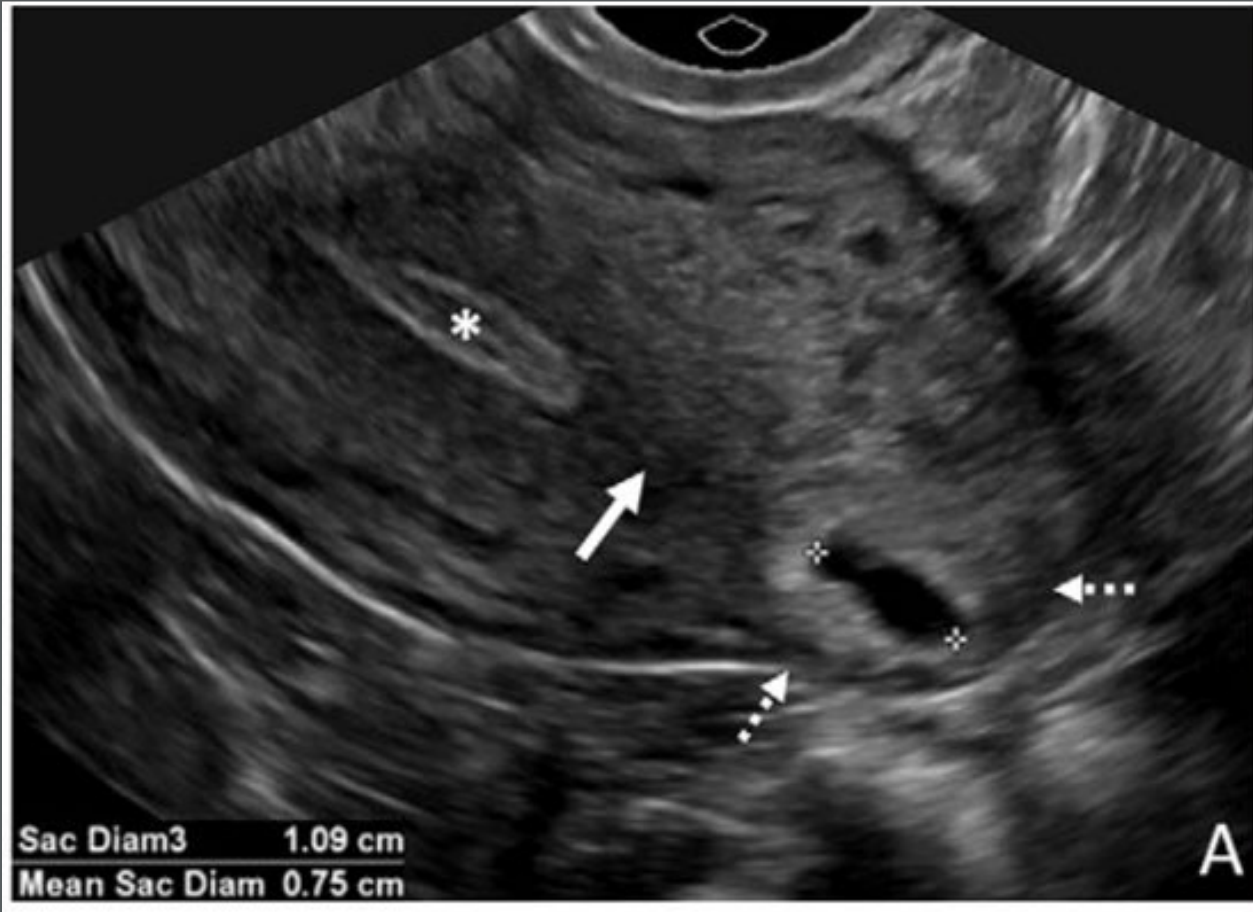


UTERUS LONG LEFT



CERVIX LONG

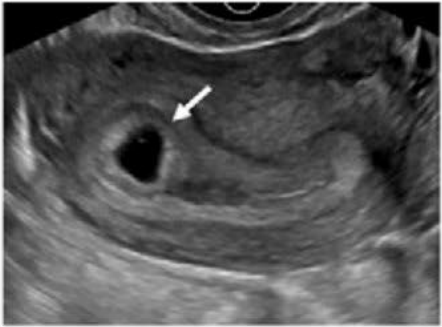
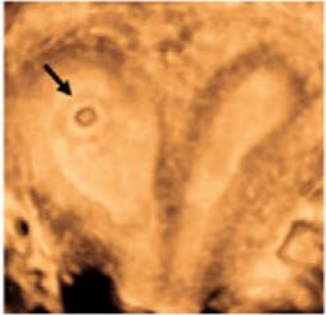
Interstitial ectopic pregnancy



- Empty uterine cavity
- Eccentric GS, thin band of myometrium between the GS and endometrium
- Thin (<5mm) myometrial layer surrounding the GS



SRU FIRST TRIMESTER ULTRASOUND LEXICON: PREGNANCY LOCATION

Term(s) <i>Alternate Term(s)</i>	Image Example(s)	Image Key	Definitions/ Applications	Term(s) to Avoid	Comments
NORMAL					
Variants: - <i>Eccentrically located GS completely surrounded by endometrium</i>		Arrow = IUP (transverse plane)		'Angular pregnancy' 'Cornual pregnancy' 'Eccentric pregnancy'	- Conclude as IUP - Optional to include description/term in report findings - Short-interval follow-up or 3D TVUS may help differentiate from interstitial EP in uncertain cases
- Describe location of GS in uterus with Müllerian duct anomaly		Arrow = IUP in right horn of septate uterus (3D coronal reconstructed plane)		'Unicornuate pregnancy' 'Bicornuate pregnancy'	- Reporting examples: - GS within a unicornuate uterus - GS within right horn of a septate uterus



SRU FIRST TRIMESTER ULTRASOUND LEXICON: PREGNANCY LOCATION

Term(s) Alternate Term(s)	Image Example(s)	Image Key	Definitions/ Applications	Term(s) to Avoid	Comments
ABNORMAL					
Ectopic pregnancy	 	Arrow = GS in left interstitial segment of tube (transverse plane) Arrow = CS scar	Pregnancy implanted in an abnormal location	'Cornual EP' 'Cesarean scar pregnancy' 'Cervical pregnancy' 'Live/living EP' 'Viable EP'	- Poses risk of maternal morbidity/mortality if untreated - General term; report laterality (if applicable) and location as follows: Tubal EP (includes <i>ampullary</i>, <i>isthmic</i>, & <i>fimbrial</i>) Interstitial EP (intra-myometrial segment of tube) Cesarean scar EP, cervical EP, ovarian EP, abdominal EP, intramural EP - Report YS, embryo/fetus and cardiac activity when seen to assist with treatment planning - No YS or embryo/fetus = probable EP - With YS or embryo/fetus = definite EP - When in LUS/endocervix, must differentiate from EPL in progress; short-interval follow-up may help in uncertain cases - With co-existing IUP = heterotopic pregnancy

Ovarian Ectopic Pregnancy

- Pregnancy implanted in ovarian stroma
- may be difficult to distinguish between tubal ectopic, corpus luteum, or hemorrhagic cyst on ultrasound
- Gestational sac in normal position of ovary or not moving separate from the ovary
- Diagnosis typically made at time of surgery and confirmed with pathologic exam

Abdominal Ectopic Pregnancy

Early pregnancy - may be difficult to distinguish from adnexal ectopic

Later pregnancy

- empty uterus
- absence of myometrial tissue between the maternal bladder and the pregnancy
- GS surrounded by loops of bowel
- poorly defined placenta
- Oligohydramnios
- unusual fetal lie/mobility

*MRI helpful to determine implantation site

*Not to be confused with expelled IUP after uterine rupture

Treatment Options



Tubal Ectopic Pregnancy

- Ampullary most common location
- Consider size, cardiac activity, hCG level and symptoms
- Management may be expectant, medical or surgical

Non-tubal ectopic pregnancy

- Cervical ectopic pregnancy
- Cesarean scar ectopic pregnancy
- Interstitial ectopic pregnancy
- Ovarian ectopic pregnancy
- Abdominal ectopic pregnancy

Often require individualized multidisciplinary management

Who needs emergent surgery

- Addressed in session #1
- Hemodynamic instability
- Suspected rupture or significant hemoperitoneum
- Progressive symptoms with concerning findings
- Clinical judgment supersedes isolated test results

Outpatient and Non-surgical management

Appropriate only for carefully selected stable patients

Reliable follow-up is essential

- Expectant management in rare cases
- Medical management: Methotrexate protocols when criteria are met
- Non-urgent or outpatient surgical planning may be appropriate for non-tubal ectopic pregnancy for specialist care coordination if appropriate

Stable Patient

- Normal vital signs without resuscitation
- Minimal pain
- No signs of intraperitoneal free fluid on ultrasound or exam
- Not requiring inpatient observation

Expectant Management

Stable patient with desired PUL

Stable patient with suspected resolving ectopic

- Asymptomatic (including pelvic exam)
- Objective evidence of resolving ectopic pregnancy with declining hCG levels
- Initial hCG level that is low
 - If hCG is initially <200, 88% of patients will have spontaneous resolution
- Willing to have close follow-up with serial hCG levels
- Willing to accept the potential risk of rupture/hemorrhage and need for surgical intervention

Methotrexate for Tubal Ectopic

- Dihydrofolate reductase inhibitor – acts primarily to inhibit DNA replication
 - Used up preferentially by fast-dividing cells: trophoblasts, gut lining, and bone marrow
- Labs: CBC with differential, AST/ALT, Cr, T&S, HCG; also need patient height and weight

Candidates	Contraindications	Precautions
• Definite or probable tubal ectopic pregnancy • Stable patient • Serum hCG < 5,000 mIU/mL • Patient preference	• Evidence of hemodynamic instability • Liver or renal disease • Evidence of immunodeficiency • Blood dyscrasia, including thrombocytopenia or significant anemia • Intrauterine pregnancy • Active peptic ulcer disease • Active pulmonary disease • Known sensitivity to methotrexate • Unstable patient • Significant free fluid in the cul-de-sac on ultrasound or other suspicion of ruptured or bleeding ectopic pregnancy • Continued breastfeeding • Inability to obtain consent • Inability to participate in follow-up	Higher failure rate • Embryonic cardiac motion • Mass on ultrasound larger than 4 cm • Serum hCG >5,000 (consider multi-dose regimen for hCG >5,000) • Refusal to accept blood transfusion • Poor patient compliance

Success of Single Dose methotrexate for tubal ectopic pregnancy

Initial hCG <1,000 mIU/ml	99%
Initial hCG <5,000 mIU/ml	>96%
Initial hCG >5,000 mIU/ml	85%
Initial hCG >15,000 mIU/ml	68%
Extrauterine pregnancy with cardiac activity	80%

Methotrexate regimens

- Single dose regimen:
 - Day 1: baseline serum hCG and administer methotrexate 50 mg/m² IM
 - Day 4: Serum hCG (possible rise)
 - Day 7: Serum hCG
 - Expect **15% decrease in hCG from day 4 to 7**
 - Can re-dose if <15% drop, if patient stable and desires (repeat labs)
 - Continue to follow serum hCG weekly until non-pregnant
- Planned 2 dose regimens or multi-dose regimens are also described



Box 2. Methotrexate Treatment Protocols ↩

Single-dose regimen*

- Administer a single dose of methotrexate at a dose of 50 mg/m² intramuscularly on day 1
- Measure hCG level on posttreatment day 4 and day 7
 - If the decrease is greater than 15%, measure hCG levels weekly until reaching nonpregnant level
 - If decrease is less than 15%, readminister methotrexate at a dose of 50 mg/m² intramuscularly and repeat hCG level
 - If hCG does not decrease after two doses, consider surgical management
- If hCG levels plateau or increase during follow-up, consider administering methotrexate for treatment of a persistent ectopic pregnancy

Two-dose regimen[†]

- Administer methotrexate at a dose of 50 mg/m² intramuscularly on day 1
- Administer second dose of methotrexate at a dose of 50 mg/m² intramuscularly on day 4
- Measure hCG level on posttreatment day 4 and day 7
 - If the decrease is greater than 15%, measure hCG levels weekly until reaching nonpregnant level
 - If decrease is less than 15%, readminister methotrexate 50 mg/m² intramuscularly on day 7 and check hCG levels on day 11
 - If hCG levels decrease 15% between day 7 and day 11, continue to monitor weekly until reaching nonpregnant levels
 - If the decrease is less than 15% between day 7 and day 11, readminister dose of methotrexate 50 mg/m² intramuscularly on day 11 and check hCG levels on day 14
 - If hCG does not decrease after four doses, consider surgical management
- If hCG levels plateau or increase during follow-up, consider administering methotrexate for treatment of a persistent ectopic pregnancy

Fixed multiple-dose regimen[‡]

- Administer methotrexate 1 mg/kg intramuscularly on days 1, 3, 5, 7; alternate with folinic acid 0.1 mg/kg intramuscularly on days 2, 4, 6, 8
- Measure hCG levels on methotrexate dose days and continue until hCG has decreased by 15% from its previous measurement
 - If the decrease is greater than 15%, discontinue administration of methotrexate and measure hCG levels weekly until reaching nonpregnant levels (may ultimately need one, two, three, or four doses)
 - If hCG does not decrease after four doses, consider surgical management
- If hCG levels plateau or increase during follow-up, consider administering methotrexate for treatment of a persistent ectopic pregnancy

Abbreviation: hCG, human chorionic gonadotropin.

*Stovall TG, Ling FW. Single-dose methotrexate: an expanded clinical trial. [Am J Obstet Gynecol 1993;168:1759-62; discussion 1762-5.](#)

†Barnhart K, Hummel AC, Sammel MD, Menon S, Jain J, Chakhtoura N. Use of “2-dose” regimen of methotrexate to treat ectopic pregnancy. [Fertil Steril 2007;87:250-6.](#)

‡Rodi IA, Sauer MV, Gorrill MJ, Bustillo M, Gunning JE, Marshall JR, et al. The medical treatment of unruptured ectopic pregnancy with methotrexate and citrovorum rescue: preliminary experience. [Fertil Steril 1986;46:811-3.](#)

Patient counseling with methotrexate

- Make hCG follow up plan
- Side effects: chills, malaise, myalgias, stomatitis, nausea, vomiting, gastritis/diarrhea, soreness of mouth, headache, mild renal and liver dysfunction, bone marrow suppression, and rarely – pneumonitis, pulmonary fibrosis, alopecia
- Abdominal pain often occurs within a few days as trophoblastic tissue separates from tube
 - Evaluation is necessary if pain is not relieved using oral pain medication.
- Stop prenatal vitamins/folic acid supplement which can decrease efficacy of methotrexate
- Avoid NSAIDs with renal clearance (methotrexate is also renally cleared) > can lead to methotrexate toxicity
- Avoid sun exposure
- Avoid vaginal intercourse or vigorous exercise
- Use contraception (limited evidence regarding recommendation to wait prior to conception)

Methotrexate for Non-tubal ectopic

- Not as well studied compared to use in tubal ectopic pregnancy and may be less effective.
 - Known to be less effective with increased gestational size, higher hCG level , or fetal cardiac activity
- May require multiple doses or direct injection
 - Local embryonical agents have also been used (such as potassium chloride)
 - Anatomic features should be considered for feasibility of direct injection.
- Time to resolution is expected to be longer
- CSEP: Society of Maternal Fetal Medicine recommends against systemic methotrexate alone.
 - Failure rates may be higher in cesarean scar ectopic pregnancies due to fibrous scar tissue limiting absorption, so local injection is favored.

Surgical Management

- Tubal: laparoscopic salpingectomy or salpingostomy
- CSEP: consider US guided suction aspiration for early cases, hysteroscopy, wedge resection, or gravid hysterectomy
- Cervical ectopic: consider US guided suction aspiration
- Interstitial: consider cornuostomy or wedge resection, or gravid hysterectomy
- Ovarian: consider wedge resection or oophorectomy
- Abdominal: individualized by implantation

Society for Maternal-Fetal Medicine

Consult Series #63: Cesarean scar ectopic pregnancy



Society for Maternal-Fetal Medicine (SMFM); Russell Miller, MD; and Cynthia Gyamfi-Bannerman, MD; Publications Committee*

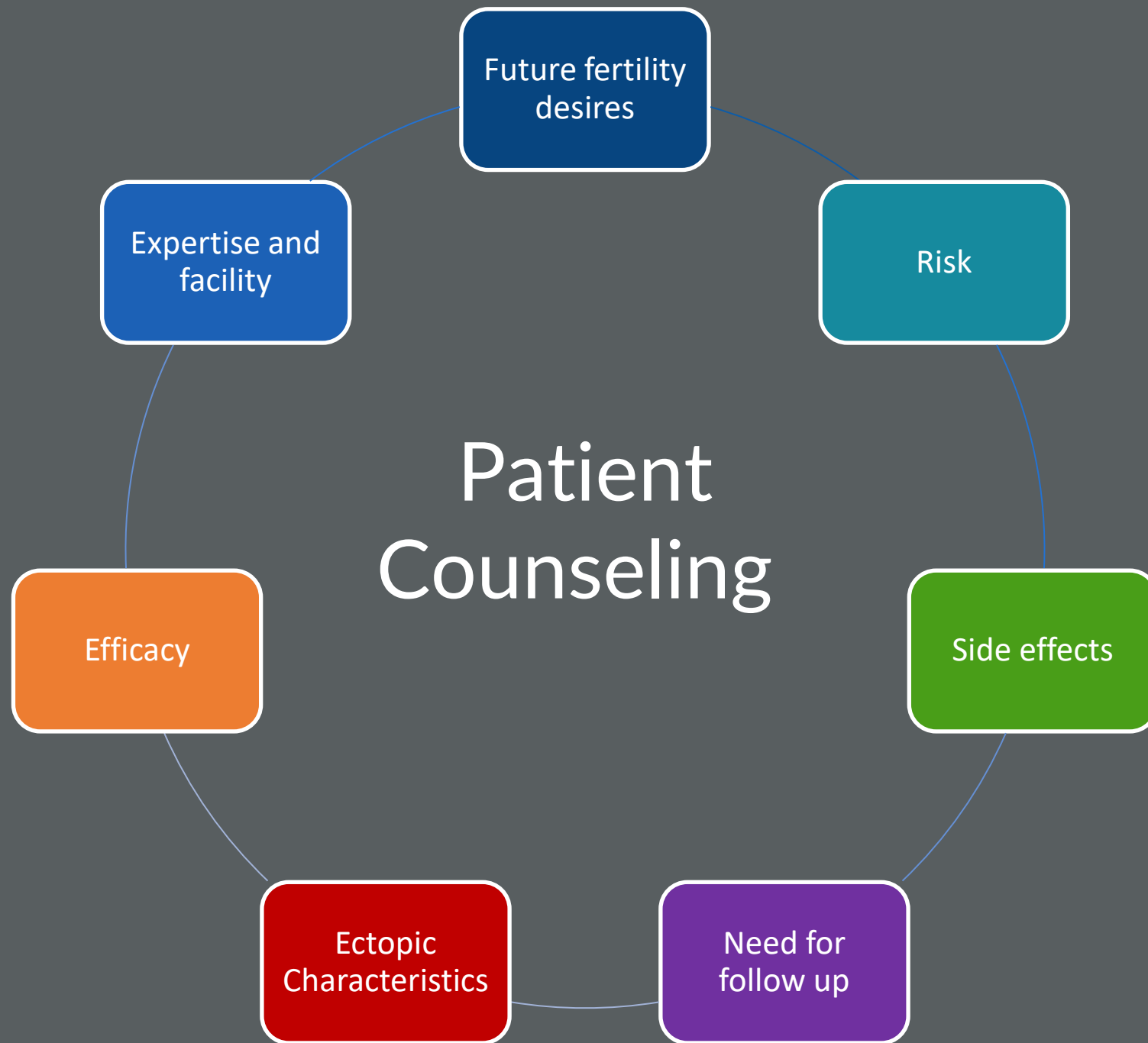
The American College of Obstetricians and Gynecologists (ACOG) and the Society of Family Planning endorse this document. The American Society for Reproductive Medicine supports this document.
This document replaces SMFM Consult Series #49: Cesarean scar pregnancy (May 2020).

UNNUMBERED TABLE 1
Summary of recommendations

	Recommendation	Grade
1	We recommend against expectant management of cesarean scar ectopic pregnancy.	1B
2	We suggest that operative resection (with transvaginal or laparoscopic approaches when possible) or ultrasound-guided uterine aspiration be considered for the surgical management of cesarean scar ectopic pregnancy and that sharp curettage alone be avoided.	2C
3	We suggest intragestational methotrexate for the medical treatment of cesarean scar ectopic pregnancy, with or without other treatment modalities.	2C
4	We recommend that systemic methotrexate alone not be used to treat cesarean scar ectopic pregnancy.	1C
5	In patients who choose expectant management and continuation of a cesarean scar ectopic pregnancy, we recommend repeated cesarean delivery between 34 0/7 and 35 6/7 wk of gestation.	1C
6	We recommend that patients with a cesarean scar ectopic pregnancy be advised of the risks of another pregnancy and counseled regarding effective contraceptive methods, including long-acting reversible contraception and permanent contraception.	1C

Society for Maternal-Fetal Medicine (SMFM). Consult Series #63: Cesarean scar ectopic pregnancy. Am J Obstet Gynecol 2022..





Treatment

Broadly, treatment will be determined by

- Patient stability
- Pregnancy location
- Pregnancy size and imaging findings
- Fertility goals
- Patient preference
- Resource availability and local expertise

Safe Decision Making

- Shared decision-making when appropriate
- Clear counseling regarding warning signs
- Close follow-up until resolution documented
- Escalate care when clinical status changes

Key Takeaways

- Ectopic pregnancy exists on a spectrum
- Location and stability guide evaluation
- Not all patients require surgery
- Timely diagnosis enables broader treatment options

Thank you!

Jessica Reid: reidje@ohsu.edu

<https://redcap.link/ectopicregistry>



Coding and Billing

- **Diagnostic coding:** There is no ICD-10 code for CSEP (*yet*)
 - 000.80: other ectopic pregnancy without intrauterine pregnancy
 - 034.22: maternal care for cesarean scar defect (isthomocoele)
- **Billing:** There is no CPT code of CSEP management; ACOG recommends:
 - No cardiac activity: CPT 59820 (treatment of missed abortion, completed surgically, first trimester)
 - Cardiac activity: CPT 59899 (unlisted procedure, maternity care and delivery), request a valuation comparable to that of 59820
 - Recommend against using 59840 - does not adequately capture nature of work involved in CSEP
 - Intraop ultrasound guidance CPT 76998
 - Modifier 22 as appropriate

References: Tubal Ectopic, PUL, and Methotrexate

ACOG Practice Bulletin No. 193: Tubal Ectopic Pregnancy. *Obstetrics and gynecology*. 2018;131(3):e91-e103. doi:10.1097/AOG.0000000000002560

Alur-Gupta S, Cooney L, Senapati S, Sammel MD, Barnhart KT. Two-dose versus single-dose methotrexate for treatment of ectopic pregnancy: a meta-analysis. *Am J Obstet Gynecol*. 2019; 95-108.

Barnhart KT, Guo W, Cary MS, et al. Differences in Serum Human Chorionic Gonadotropin Rise in Early Pregnancy by Race and Value at Presentation. *Obstetrics and gynecology* 2016;128:504-11.

Barnhart K, Hummel AC, Sammel MD, Menon S, Jain J, et al. Use of “2-dose” Regimen of Methotrexate to Treat Ectopic Pregnancy. *Fertil Steril* 2007;87(2):250-6.

Connolly A, Ryan DH, Stuebe AM, Wolfe HM. Reevaluation of Discriminatory of Threshold Levels for Serum bhCG in Early Pregnancy. *Obstet Gynecol* 2013;121:65-70.

Creanga AA, Shapiro-Mendoza CK, Bish CL, Zane S, Berg CJ, Callaghan WM. Trends in ectopic pregnancy mortality in the United States: 1980-2007. *Obstetrics and gynecology*. 2011;117(4):837-843. doi:10.1097/AOG.0B013E3182113C10

Doubilet P, Benson CB, Bourne T, Blaivas, M. Diagnostic Criteria for Nonviable Pregnancy Early in the First Trimester. *N Eng J Med* 2013;369:1433-1451.

Garcia CR, Brown HA, Barnhart, KT. Prophylactic methotrexate after linear salpingostomy: a decision analysis. *Fertil Steril* 2001;76(6):1191-1195.



Hawrylyshyn K, McLeod SL, Thomas J, Varner C. Methotrexate for the treatment of unruptured tubal ectopic pregnancy. CJEM JCMU 2019. 21:391-394.

Horvath S, Goyal V, Traxler S, Prager S. Society of Family Planning committee consensus on Rh testing in early Pregnancy. Contraception 2022; 114:1-5.

Lee JH et al. A risk prediction model for medical treatment failure in tubal pregnancy. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2018. 225:148-154.

Lipscomb GH, Bran D, McCord ML, Portera JC, Ling FW. Analysis of Three Hundred Fifteen Ectopic Pregnancies Treated with Single-Dose Methotrexate. Am J Obstet Gynceol 1998;178:1354-8

Lipscomb GH, McCord ML, Stovall TG, Huff G, Portera SG, et al. Predictors of Success of Methotrexate in Women with Tubal Ectopic Pregnancies. N Eng J Med 1999 23;41:1974-8.

Kanmaz AGK, Inan AH, Beyan E, Budak A. Various BhCG monitoring protocols for predicting the success of single-dose methotrexate in the treatment of ectopic pregnancy. Journal of Obstetrics and Gynaecology. 2019, 39:6, 811-815.

Kasaven LS, Shah A, Sadoon S. Chronic tubal ectopic pregnancy following clinically successful methotrexate treatment for an acute ectopic: a review of the literature. Journal of Obstetrics and Gynaecology. 2019, 39:4, 562-563.

Tubal Ectopic Pregnancy. ACOG Practice Bulletin Number 193, American College of Obstetricians and Gynecologists. Obstet Gynecol 2018;131:e91-103.

Medical Treatment of Ectopic Pregnancy: a Committee Opinion. ARSM. Fertil Steril 2013;100(3):638-44.

Menon S, Colins J, Barnhart KT. Establishing a Human Chorionic Gonadotropin Cutoff to Guide Methotrexate Treatment of Ectopic Pregnancy: a Systematic Review. Fertil Steril 2007;87:481-4.

Morse CB, Sammel MD, Shaunik A, Allen-Taylor L, Oberfoell NL, et al. Performance of hCG curves in women at risk for ectopic pregnancy: exceptions to the rules. Fertil Steril 2012;97(1):101-106.

Yang C, Cai J, Geng Y, Gao Y. Multiple-dose and double-dose versus single-dose administration of methotrexate for the treatment of ectopic pregnancy: a systematic review and meta-analysis. Reproductive Biomedicine Online 2017; 34:383-391.



References: CSEP and Non-Tubal Ectopic

Alalade AO, Smith FJE, Kendall CE, Odejinmi F. Evidence-based management of non-tubal ectopic pregnancies. J Obstet Gynaecol 2017;37:982-91.

Arslan M, Pata O, Dilek TU, Aktas A, Aban M, Dilek S. Treatment of viable cesarean scar ectopic pregnancy with suction curettage. Int J Gynaecol Obstet. 2005 May;89(2):163-6. doi: 10.1016/j.ijgo.2004.12.038. PMID: 15847889.

Birch Petersen K, Hoffmann E, Rifbjerg Larsen C, Svarre Nielsen H. Cesarean scar pregnancy: a systematic review of treatment studies. Fertil Steril. 2016;105(4):958-67.

Calì G, Timor-Tritsch IE, Palacios-Jaraquemada J, Monteaugudo A, Buca D, Forlani F, Familiari A, Scambia G, Acharya G, D'Antonio F. Outcome of Cesarean scar pregnancy managed expectantly: systematic review and meta-analysis. Ultrasound Obstet Gynecol. 2018 Feb;51(2):169-175. doi: 10.1002/uog.17568. PMID: 28661021.

Chetty M, Elson J. Treating non-tubal ectopic pregnancy. Best Pract Res Clin Obstet Gynaecol. 2009;23(4):529-38.

Cheung VY. Local Methotrexate Injection as the First-line Treatment for Cesarean Scar Pregnancy: Review of the Literature. J Minim Invasive Gynecol. 2015;22(5):753-8.

Dior UP, Palma-Dias R, Reidy KL, Cheng C, Healey M. Cesarean Scar Pregnancies: Incidence and Factors Associated with Conversion to Surgery from Medical Management. J Minim Invasive Gynecol. 2019;26(5):919-27.

Dolinko AV, Vrees RA, Frishman GN. Non-tubal Ectopic Pregnancies: Overview and Treatment via Local Injection. J Minim Invasive Gynecol. 2018;25(2):287-96.

Fylstra DL. Ectopic pregnancy not within the (distal) fallopian tube: etiology, diagnosis, and treatment. Am J Obstet Gynecol. 2012;206(4):289-99.

Glenn TL, Bemby J, Findley AD, Yaklic JL, Bhagavath B, Gagneux P, et al. Cesarean Scar Ectopic Pregnancy: Current Management Strategies. Obstet Gynecol Surv. 2018;73(5):293-302.

Glenn TL, Han E. Cesarean scar defect: far from understood. Fertil Steril. 2021 Aug;116(2):369-370. doi: 10.1016/j.fertnstert.2021.06.006. Epub 2021 Jul 4. PMID: 34233841.

Goldenberg M, Timor I, Mashlach R, Cohen S, Sasson AM. Pregnancy following cesarean scar defect (niche) repair: a cohort study. Arch Gynecol Obstet. 2022 Nov;306(5):1581-1586. doi: 10.1007/s00404-022-06088-w. Epub 2022 Jul 15. PMID: 35835918.



Gomez García MT, Ruiz Sanchez E, Aguaron Benitez G, Nogueira García J, Callejon Rodriguez C, Gonzalez Merlo G. Cesarean scar ectopic pregnancy successfully treated with methotrexate and mifepristone. J Obstet Gynaecol. 2015;35(1):105-6.

Long Y, Zhu H, Hu Y, Shen L, Fu J, Huang W. Interventions for non-tubal ectopic pregnancy. Cochrane Database Syst Rev. 2020;7(7). doi:10.1002/14651858.CD011174.PUB2

Maheux-Lacroix S, Li F, Bujold E, Nesbitt-Hawes E, Deans R, Abbott J. Cesarean Scar Pregnancies: A Systematic Review of Treatment Options. J Minim Invasive Gynecol. 2017;24(6):915-25.

Miller R, Gyamfi-Bannerman C. Society for Maternal-Fetal Medicine (SMFM) Consult Series #63: Cesarean scar ectopic pregnancy. Am J Obstet Gynecol. 2022:B9-B20.

Osterman MJK. Changes in primary and repeat cesarean delivery: United States, 2016–2021. Vital Statistics Rapid Release; no 21. Hyattsville, MD: National Center for Health Statistics. July 2022. DOI: <https://dx.doi.org/10.15620/cdc:117432> .

Parker VL, Srinivas M. Non-tubal ectopic pregnancy. Arch Gynecol Obstet 2016;294:19-27.

Polat I, Ekiz A, Acar DK, Kaya B, Ozkose B, Ozdemir C, Talay H, Gedikbasi A. Suction curettage as first line treatment in cases with cesarean scar pregnancy: feasibility and effectiveness in early pregnancy. J Matern Fetal Neonatal Med. 2016;29(7):1066-71. doi: 10.3109/14767058.2015.1034100. Epub 2015 Apr 21. PMID: 25897638.

Reid JA, Bayer LL, Edelman AB, Colwill AC. Controversies in family planning: Management of cesarean-scar ectopic pregnancy. Contraception. 2021 Mar;103(3):208-212. doi: 10.1016/j.contraception.2020.12.006. Epub 2020 Dec 23. PMID: 33359510.

Shen L FJ, Huang W, Zhu H, Wang Q, Yang S, Wu T. Interventions for non-tubal ectopic pregnancy. Cochrane Database of Systematic Reviews. 2014(7:CD011174).

Srisajjakul S, Prapaisilp P, Bangchokdee S. Magnetic resonance imaging in tubal and non-tubal ectopic pregnancy. Eur J Radiol. 2017;93:76-89.

Timor-Tritsch IE, Monteagudo A, Santos R, Tsymbal T, Pineda G, Arslan AA. The diagnosis, treatment, and follow-up of cesarean scar pregnancy. Am J Obstet Gynecol. 2012 Jul;207(1):44.e1-13. doi: 10.1016/j.ajog.2012.04.018. Epub 2012 Apr 16. PMID: 22607667

Timor-Tritsch IE, Monteagudo A. Unforeseen consequences of the increasing rate of cesarean deliveries: early placenta accreta and cesarean scar pregnancy. A review. Am J Obstet Gynecol. 2012 Jul;207(1):14-29. doi: 10.1016/j.ajog.2012.03.007. Epub 2012 Mar 10. Erratum in: Am J Obstet Gynecol. 2014 Apr;210(4):371-4. PMID: 22516620.

Timor-Tritsch IE, Monteagudo A, Cali G, Vintzileos A, Viscarello R, Al-Khan A, Zamudio S, Mayberry P, Cordoba MM, Dar P. Cesarean scar pregnancy is a precursor of morbidly adherent placenta. Ultrasound Obstet Gynecol. 2014 Sep;44(3):346-53. doi: 10.1002/uog.13426. Epub 2014 Jul 31. PMID: 24890256.



Timor-Tritsch IE, Monteagudo A, Bennett TA, Foley C, Ramos J, Kaelin Agten A. A new minimally invasive treatment for cesarean scar pregnancy and cervical pregnancy. *Am J Obstet Gynecol.* 2016;215(3):351 e1-8.

Timor-Tritsch IE, Monteagudo A, Kaelin Agten A. Recap-Minimally invasive treatment for cesarean scar pregnancy using a double-balloon catheter: additional suggestions to the technique. *Am J Obstet Gynecol.* 2017;217(4):496-7.

Timor-Tritsch IE, Khatib N, Monteagudo A, Ramos J, Berg R, Kovacs S. Cesarean scar pregnancies: experience of 60 cases. *J Ultrasound Med.* 2015;34(4):601-10.

Timor-Tritsch IE, Monteagudo A, Santos R, Tsymbal T, Pineda G, Arslan AA. The diagnosis, treatment, and follow-up of cesarean scar pregnancy. *Am J Obstet Gynecol.* 2012;207(1):44 e1-

Timor-Tritsch, I.E., Horwitz, G., D'Antonio, F., Monteagudo, A., Bornstein, E., Chervenak, J., Messina, L., Morlando, M. and Cali, G. (2021), Recurrent Cesarean scar pregnancy: case series and literature review. *Ultrasound Obstet Gynecol*, 58: 121-126. <https://doi.org/10.1002/uog.23577>

Verma U, English D, Brookfield K. Conservative management of nontubal ectopic pregnancies. *Fertil Steril.* 2011;96(6):1391-5 e1.

Vial Y, Petignat P, Hohlfeld P. Pregnancy in a cesarean scar. *Ultrasound Obstet Gynecol.* 2000;16(6):592-3.

Vo TM, Van T, Nguyen L, Tran Q. Management of Cesarean Scar Pregnancy among Vietnamese Women. *Gynecol Minim Invasive Ther.* 2019;8(1):12-8.

Weilin C, Li J. Successful treatment of endogenous cesarean scar pregnancies with transabdominal ultrasound-guided suction curettage alone. *Eur J Obstet Gynecol Reprod Biol.* 2014 Dec;183:20-2. doi: 10.1016/j.ejogrb.2014.10.017. Epub 2014 Oct 23. PMID: 25461346.

Wu BT, Feld Z, Creinin MD. Management of cesarean scar ectopic pregnancies at an academic referral center: A case series. *Contraception.* 2023 Jul;123:110021. doi: 10.1016/j.contraception.2023.110021. Epub 2023 Mar 20. PMID: 36940910.

Wu J, Ye J, OuYang Z, Wan Z, Zhang Q, Zhong B, Wei S. Outcomes of reproduction following cesarean scar pregnancy treatment: A systematic review and meta-analysis. *Eur J Obstet Gynecol Reprod Biol.* 2021 Jul;262:80-92. doi: 10.1016/j.ejogrb.2021.05.010. Epub 2021 May 10. PMID: 33993066.

Xiao J, Zhang S, Wang F, Wang Y, Shi Z, Zhou X, et al. Cesarean scar pregnancy: noninvasive and effective treatment with high-intensity focused ultrasound. *Am J Obstet Gynecol.* 2014;211(4):356 e1-7.

Yang Q, Piao S, Wang G, Wang Y, Liu C. Hysteroscopic surgery of ectopic pregnancy in the cesarean section scar. *J Minim Invasive Gynecol.* 2009;16(4):432-6.

Zhu X, Deng X, Wan Y, Xiao S, Huang J, Zhang L, et al. High-intensity focused ultrasound combined with suction curettage for the treatment of cesarean scar pregnancy. *Medicine (Baltimore).* 2015;94(18):e554.



Questions?

Please enter your questions in the Q&A box at the bottom of your screen.

Thank You!

Scan here for CME credit
survey:



Scan here for CE credit
survey:

