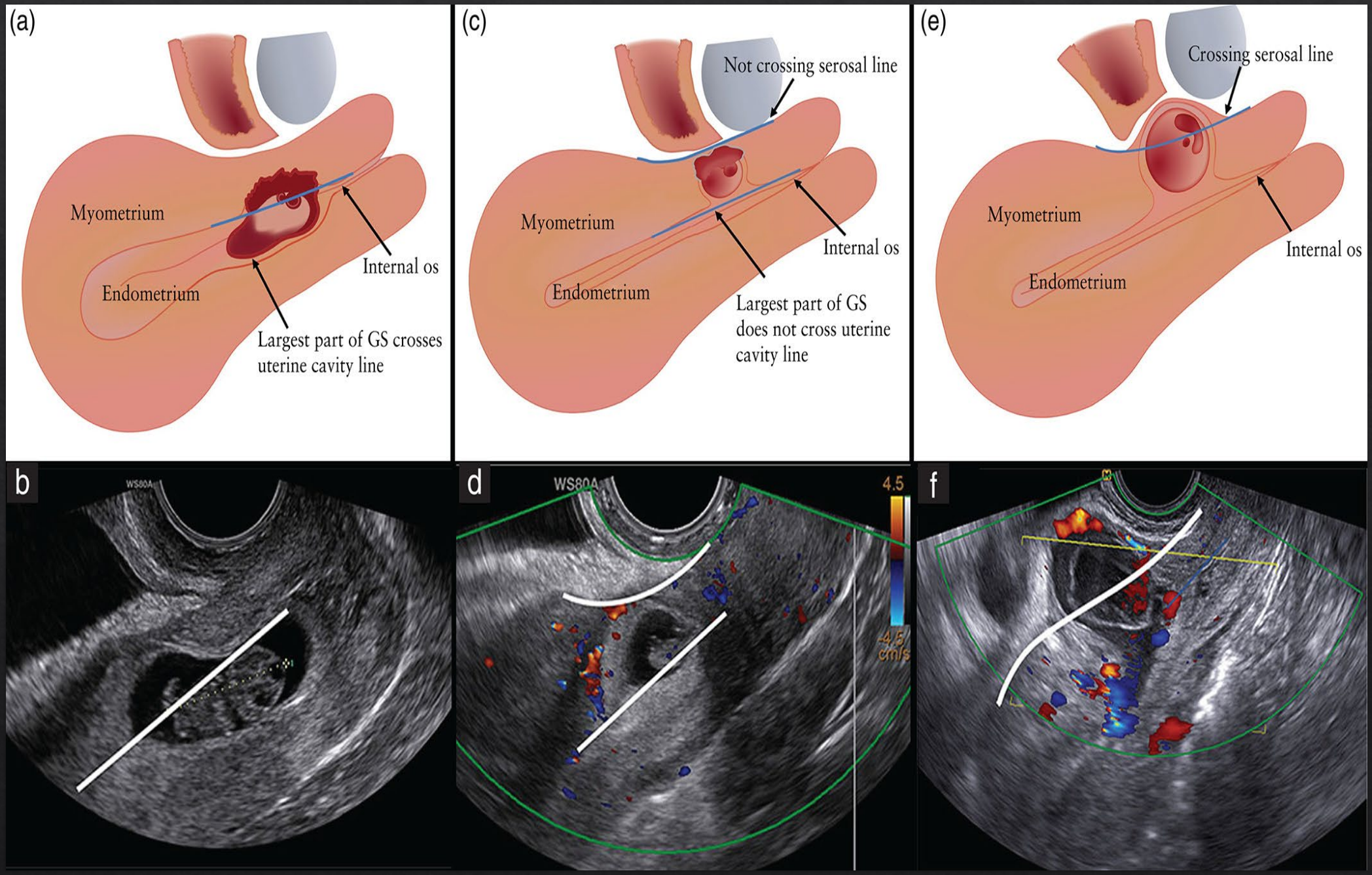
Treatment of Cesarean Scar Pregnancy

Dr Reihaneh Hosseini

Tehran University of Medical Sciences

Arash Hospital


(a)
Myometrium
Endometrium
Internal os
Largest part of GS crosses uterine cavity line
(c)
Not crossing serosal line
Myometrium
Endometrium
Internal os
Largest part of GS does not cross uterine cavity line
(e)
Crossing serosal line
Myometrium
Endometrium
Internal os
b
d
4.5
f

Hemodynamically unstable patients

- A patient with hemorrhage and existing or impending hemodynamic instability requires immediate surgical intervention (eg, wedge resection, gravid hysterectomy) and/or a minimally invasive procedure (UAE).

Hemodynamically stable patients

- In hemodynamically stable patients, management options include termination of pregnancy (medical or surgical) or continuation of the pregnancy.

- The optimal management is unclear as there are an insufficient number of reported cases on which to base a specific treatment recommendation.
- Shared decision-making is essential and guided by factors such as CSP type ,gestational age, desire for future fertility, and experience of the physician treating the patient.

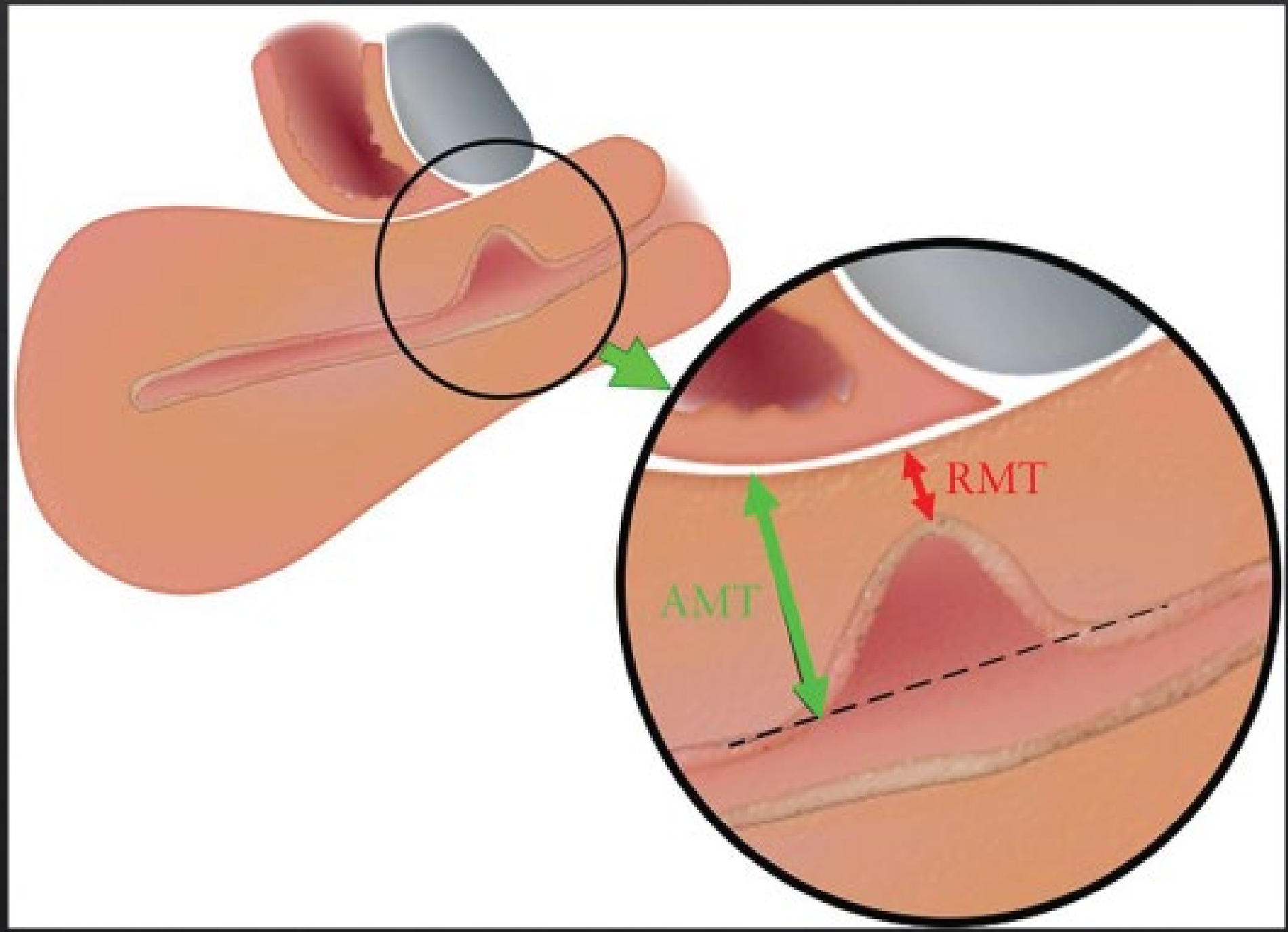
- Patients with an embryonic/fetal demise can be managed expectantly or with medical or surgical therapy

For patients choosing expectant management, weekly follow-up with serum human chorionic gonadotropin (hCG) and transvaginal ultrasound (TVUS) are performed until the hCG is undetectable and the pregnancy recedes completely on imaging, which can take several months to occur.

- Patients with live pregnancy can decide to continue or terminate pregnancy.

- For patients with a desired, live pregnancy, outcomes appear to be more favorable for patients in whom the CSP is "on-the-scar" (type 1) **and** with a myometrial thickness ≥3 mm.

- Outcomes appear to be less favorable for patients in whom the CSP is "in-the-niche" (type 2) or with a myometrial thickness <3 mm.


RMT
AMT

In one retrospective study including 17 patients with CSP diagnosed prior to nine weeks gestation, patients with "on-the-scar" (type 1) compared with "in-the-niche" (type 2) CSP were delivered at more advanced gestational ages (38 weeks versus 34 weeks) and had lower rates of cesarean-hysterectomy (1 of 6 patients [17 percent] versus 11 of 11 patients [100 percent])

- **Pregnancy termination** — For patients who choose to terminate their pregnancy, treatment is time-sensitive. As with patients without CSP, the morbidity associated with pregnancy termination increases with increasing gestational age. Management (ie, surgical or medical) is effective and depends on the following factors:

- ●**Is this a second-trimester CSP?** – For patients in their second trimester, we suggest surgical rather than medical management.

- ●**Is future pregnancy desired?** If future pregnancy is not desired, and for patients who prefer definitive surgical management, gravid hysterectomy may be performed

Operative resection

- Operative resection (wedge resection) of the pregnancy can be performed via laparoscopy
- An advantage of resection over other therapies is that the scar can be excised and the uterus reapproximated.
- Operative resection is also likely to be curative; however, monitoring serum hCG levels weekly until undetectable is reasonable to confirm resolution

laparatomy

- •A Pfannenstiel incision is made, and the abdomen entered.
- •The uterus is grasped with a uterine elevating forceps and delivered through the skin incision.
- •The peritoneum is incised along the medial aspect of the round ligament; the vesicouterine fold is identified, and both index fingers are used to dissect the posterior bladder from the cervix until the cesarean scar is adequately exposed.
- •0-delayed absorbable (Vicryl) suture is placed to occlude uterine vessels and reduce blood flow to the CSP.

- •A scalpel with a number 5 blade is used to cut the uterine tissue around the CSP; approximately 5 mm of healthy myometrial borders are included in the incision.
- •If bleeding occurs from the sectioned myometrium, 3-0 absorbable suture (rather than electrocautery) is used to obtain hemostasis.
- •The inside of the uterine cavity is wiped with a gauge sponge to remove any remaining pregnancy tissue.
- •The uterus is closed with 0 delayed absorbable suture in a running stitch.

•Ultrasound-guided suction aspiration

- Suction aspiration is typically performed for patients in the early first trimester (five to seven weeks of gestation) with use of a transcervical balloon catheter if heavy bleeding occurs

- Significant bleeding requirs the insertion of an intrauterine balloon catheter to tamponade the uterine cavity to achieve hemostasis.

Gravid hysterectomy

- Gravid hysterectomy should only be performed in patients in whom future childbearing is not desired or in those with life-threatening hemorrhage

•Intragestational injection of MTX

- Local injection of 25 mg MTX into the exocoelomic cavity is successful in up to 70 percent
- Some patients require emergency surgery to control hemorrhage over or slow resolution of the pregnancy should be expected.
- In a study of 101 patients with CSP treated with ultrasound-guided MTX injection, the mean time to hCG resolution was 40 days (range 21 to 140 days)

Intragestational injection of KCl

Ultrasound-guided (transabdominal or transvaginal) KCl injection (5 mEq into the gestational sac) into a CSP with embryonic/fetal cardiac activity may also be used as a secondary procedure if other treatments (UAE, balloon catheters) do not result in cessation of fetal heart activity.

•Transcervical insertion of balloon catheters

- The catheter is fastened to the patient's thigh and left in place for 24 to 48 hours.

- Before deflating the balloon(s), the embryonic/fetal cardiac activity is rechecked to confirm cessation. If cardiac activity is still present, the balloon may be inflated to a higher pressure; adjuvant therapies (eg, intragestational MTX or KCl, systemic MTX) may also be administered.
- After catheter removal, the patient is closely monitored for any heavy bleeding; the patient should be observed for approximately one hour and can be discharged home with instructions to return for an ultrasound examination within two or three days. Serial ultrasound examinations and hCG levels are typically followed until complete resolution of the CSP.

Adjunctive therapy

- UAE
- Systemic MTX

Treatments not used

- Expert groups recommend **not** using the following treatments:

- **•Systemic MTX alone in patients with a live gestion**

- **Sharp curettage** — Expert groups recommend **against** sharp curettage given the higher risk of complications (eg, perforation, hemorrhage, need for reintervention)

Management

- All patients with CSP should be transferred, whenever possible, to a center of excellence for PAS, or a tertiary care hospital in which maternal-fetal medicine specialists

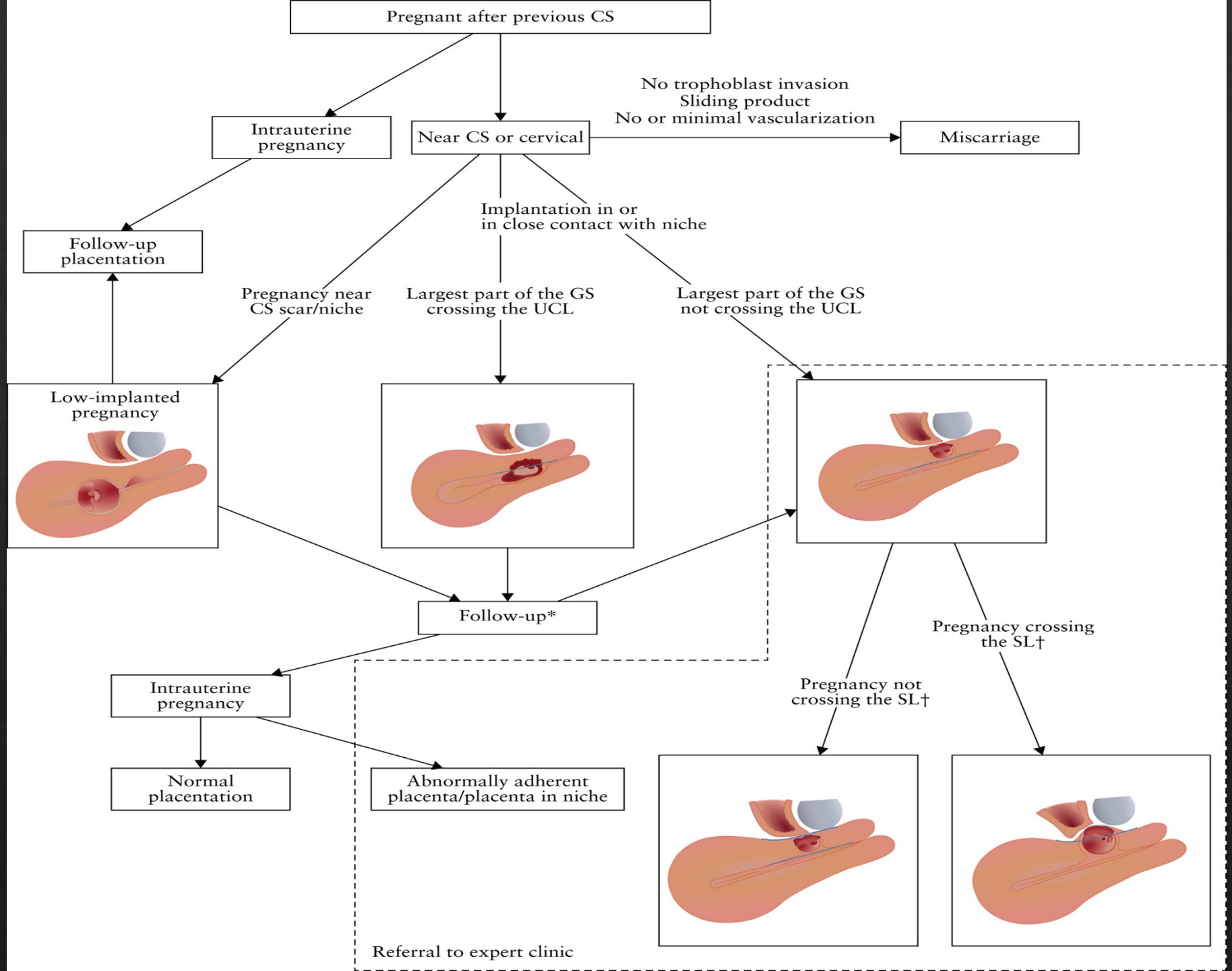
- •For hemodynamically stable patients, the optimal management (ie, surgical or medical termination, expectant management) is unclear. While expert groups generally advise pregnancy termination, some pregnancies will continue to, or close to, term and thus some patients will choose to continue the pregnancy. Shared decision-making is essential and guided by factors such as CSP type, gestational age, desire for future fertility, and experience of the physician treating the patient

- For patients with a live pregnancy choosing termination at more advanced (ie, second trimester) gestational ages, we suggest surgical rather than medical therapies.

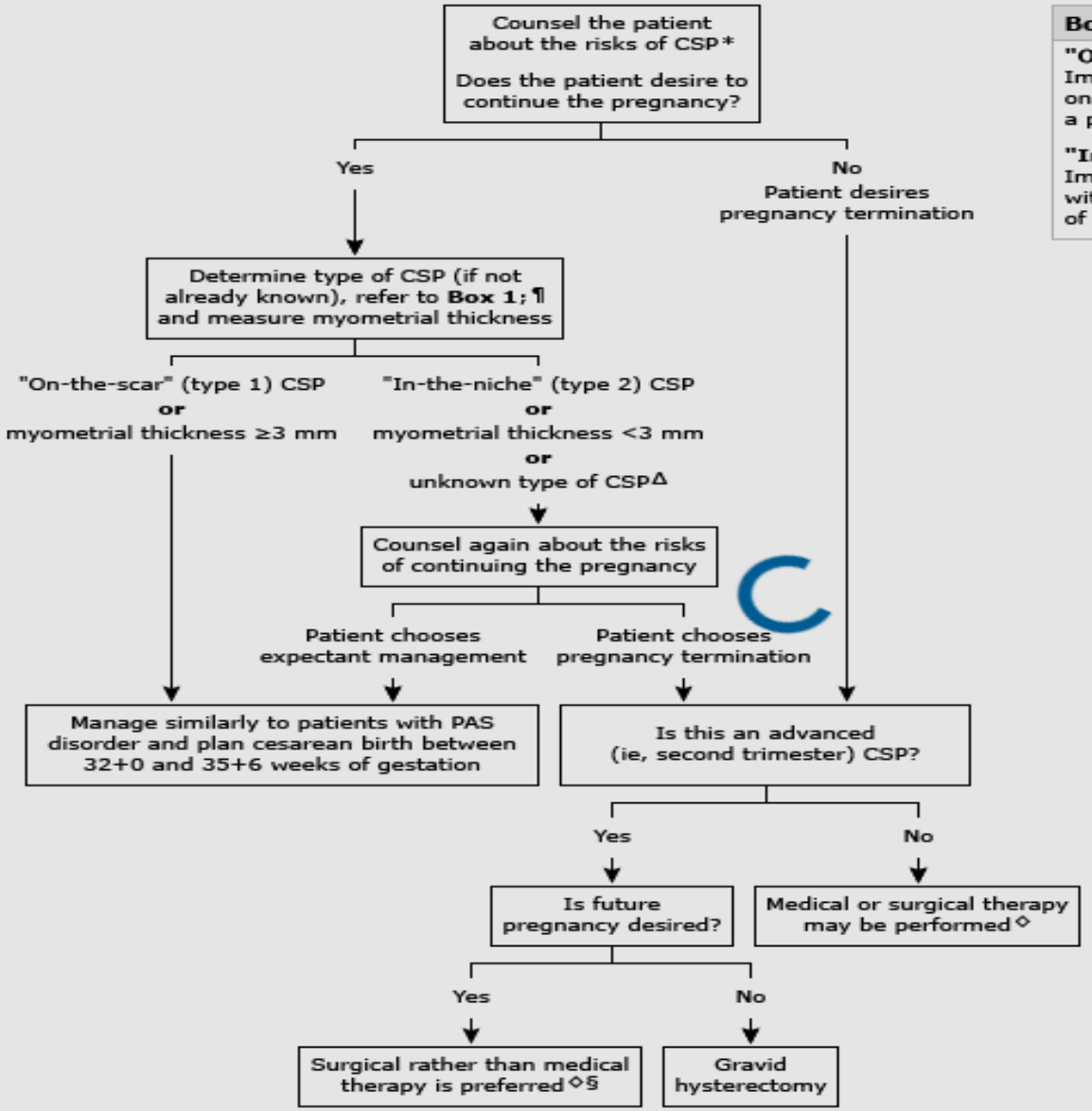
- For patients at earlier gestations, medical or surgical therapies can be used

- UAE and systemic methotrexate (MTX) are frequently used as adjunctive therapy

- We do **not** use of systemic MTX alone, misoprostol, or sharp uterine curettage for the management of CSP


Pregnant after previous CS
Intrauterine pregnancy
Near CS or cervical
No trophoblast invasion
Sliding product
No or minimal vascularization
Miscarriage
Follow-up placentation
Implantation in or in close contact with niche
Pregnancy near CS scar/niche
Largest part of the GS crossing the UCL
Largest part of the GS not crossing the UCL
Low-implanted pregnancy
Follow-up*
Intrauterine pregnancy
Normal placentation
Abnormally adherent placenta/placenta in niche
Pregnancy not crossing the SL†
Pregnancy crossing the SL†
Referral to expert clinic

Management of patients with a live cesarean scar pregnancy



Box 1

"On-the-scar" (type 1): Implantation of the CSP on the well-healed scar of a previous cesarean birth

"In-the-niche" (type 2): Implantation of the CSP within the defect or "niche" of an incompletely healed scar

Patients with CSP and embryonic/fetal demise are managed differently; refer to related UpToDate content regarding management of such patients.

با تشکر از توجه شما