



et GE HealthCare



GE HealthCare



Diagnostic et CAT devant la suspicion d'un placenta accreta

Guillaume BENOIST (CFEF Monaco)

GYNÉCOLOGIE OBSTÉTRIQUE

CHPG MONACO

- PAS = spectre placenta accreta
- Définition histologique mais aussi clinique
- Le placenta accreta se caractérise par une adhérence anormale du placenta au myomètre, du fait de l'absence localisée ou diffuse de la caduque basale/ decidua qui, habituellement, s'interpose entre les villosités trophoblastiques et le myomètre
- Défaut de clivage du placenta à la délivrance / risque hémorragique majeur

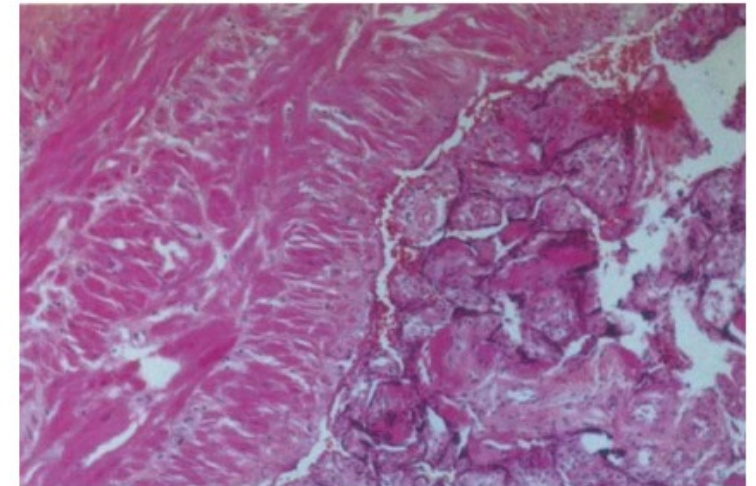
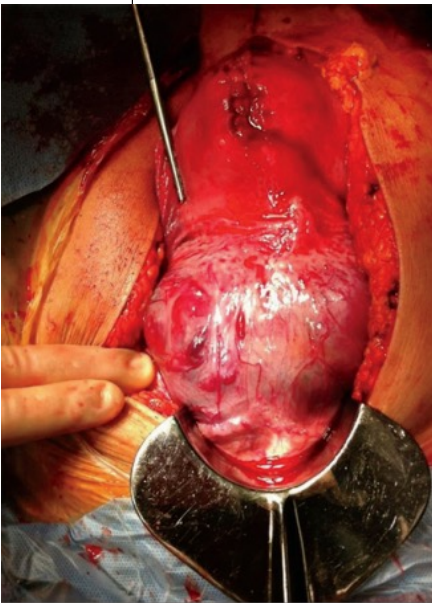
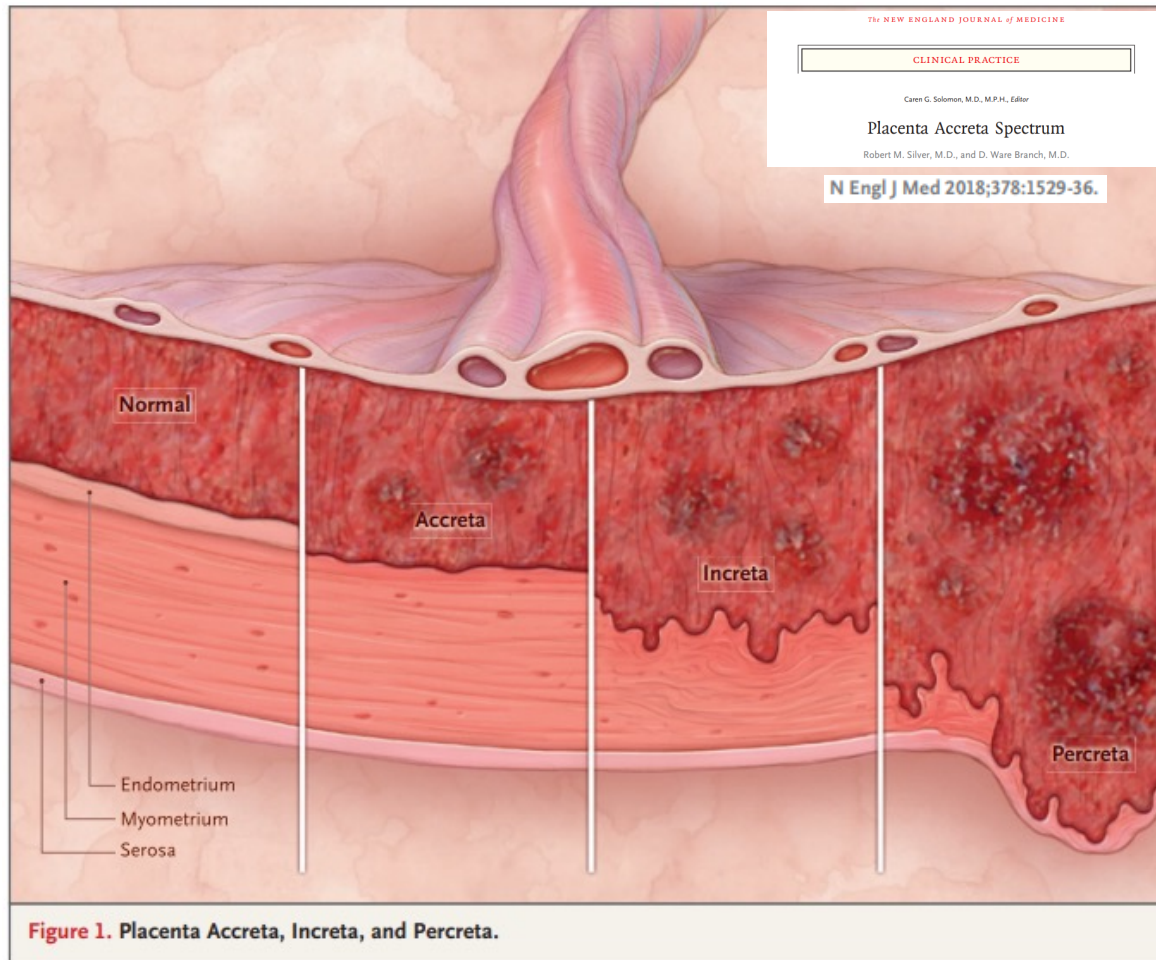


Figure 1. Aspect histologique d'un placenta accreta : absence de decidua entre la plaque basale du placenta et le myomètre.

Différentes Formes de PAS



- Forme **accreta** (75 %): pénétration superficielle des villosités dans le myomètre
- Forme **increta** (15 %): pénétration profonde des villosités sans atteindre la séreuse.
- Forme **percreta**, les villosités traversent le myomètre pour atteindre la séreuse et même les organes pelviens

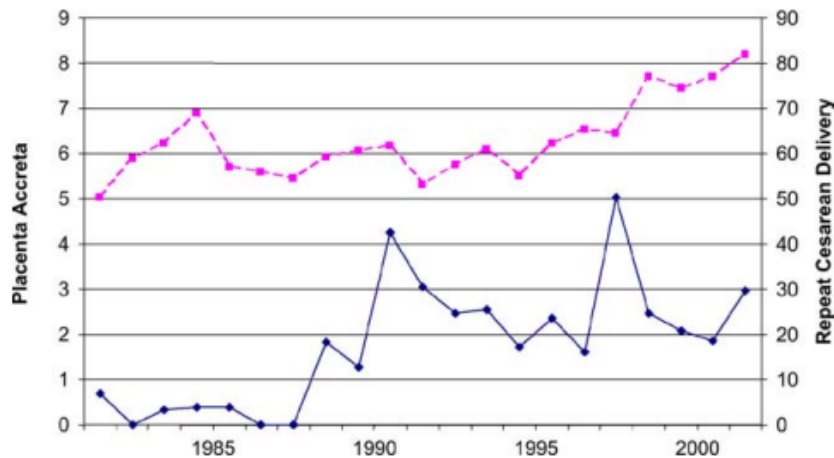


Figure 1 Rates of placenta accreta (*solid line*) and repeat cesarean delivery (*dashed line*) per 1000 deliveries at the University of Chicago, 1982-2002. Note that different scales for placenta accreta (left axis) and repeat CD (right axis) are used. ◆, Rate of accreta; ■, rate of repeat cesarean.

Wu et al. AJOG 2005

- 64 359 accouchements, avec des taux de césarienne passant de 12,5 % (1982) à 23,5 % (2002).
- L'incidence globale du placenta accreta était de 1 sur 533.
- Dans les années 1970 et 1980, elle était estimée entre 1 sur 2510 et 1 sur 4017, et entre 1982 et 2002, elle a atteint 1 sur 533.
- x8 depuis les années 70

Augmentation du nombre de cas de PAS

Corrélation taux de césarienne / nombre de PAS

- **Placenta praevia** : (OR: 51,4; IC 95%: 10,6-238,4), risque majoré si ATCD de césarienne.
- **Cicatrices utérines** : **Césarienne**, Curetage, Myomectomie, Métroplastie d'agrandissement, Cure de synéchie ou cloison utérine
- **Age maternel avancé** (> 35 ans)
- **ACTD de placenta accreta**
- **Synéchie, endométrite, multiparité, AMP (?)**

Clark AJOG 1985; Miller AJOG 1997; Wu AJOG 2005.

Risque de PAS en cas de praevia en f° du nb de césarienne

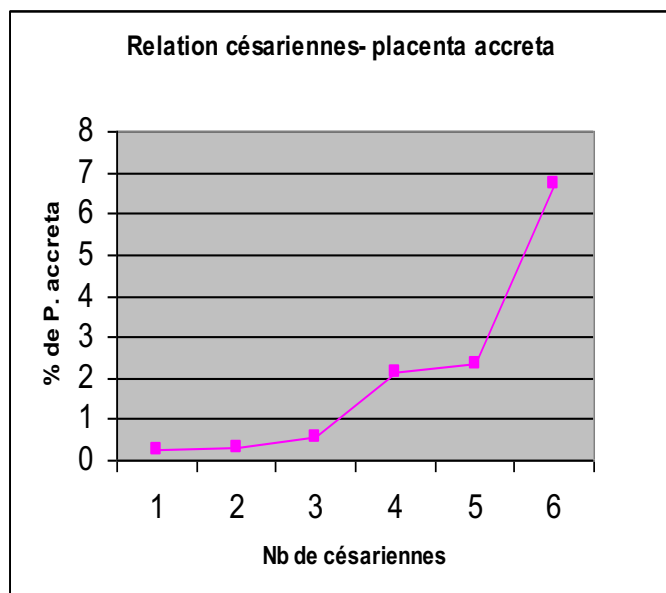


TABLE 4 Rates of placenta accreta spectrum (PAS) disorders, placenta previa, and hysterectomy by number of previous cesarean deliveries.^a

No. of previous cesareans	No. of women	Incidence of PAS disorders	Rate of PAS disorders if placenta previa	No. of hysterectomies
0	6201	15 (0.24%)	3%	40 (0.65%)
1	15 808	49 (0.31%)	11%	67 (0.42%)
2	6324	36 (0.57%)	40%	57 (0.9%)
3	1452	31 (2.13%)	61%	35 (2.4%)
4	258	6 (2.33%)	67%	9 (3.49%)
5	89	6 (6.74%)	67%	9 (8.99%)

Un placenta accreta doit être suspecté chez toute patiente présentant un placenta previa (surtout antérieur) avec un ATCD de césarienne. Sentilhes Presse Med 2010

Importance du dépistage des PAS

Table 2. Comparison of Maternal Outcomes Between Patients With Predelivery Diagnosis and Those Without

	Predelivery Diagnosis (n=62)	No Predelivery Diagnosis (n=37)	<i>P</i>
Gestational age (wk)*	33.9±1.1	34.7±1.2	.34
Estimated blood loss (mL)*	2,344±1.7	2951±1.8	.053
Operative time (min)*	194±1.6	178±1.9	.44
Units of PRBCs*	4.7±2.2	6.9±1.8	.02
Units of FFP*	4.1±2.3	5.0±2.5	.49
Units of platelets*	2.9±2.0	2.1±1.9	.76
Maternal ICU admission	43 (72)	22 (65)	.49
Maternal hospital days*	7.4±1.8	5.5±1.6	.01
Surgical complications			
Bladder	14 (23)	3 (9.8)	
Ureter	5 (8)	1 (3.2)	
Bowel	0	1 (3.2)	.10

Warschak Obstet Gynecol 2010

Importance du lieu d'accouchement

Table 4. Maternal Morbidity in Cases of Suspected Accreta Stratified by Delivery Site

	Multidisciplinary Care Center (n=60)	Standard Care Center (n=23)	<i>P</i>
Estimated blood loss (L)	2.6 (0.15–9)	4.0 (0.6–23)	.096*
Maternal admission to intensive care unit	18 (30)	9 (39)	.427
Early reoperation	2 (3)	9 (41)	<.001 [†]
Coagulopathy [‡]	17 (28)	9 (41)	.278
Large-volume blood transfusion			
4 or more units of packed red cells	25 (42)	16 (70)	.023
Cystotomy	22 (37)	10 (43)	.568
Ureteral injury	4 (7)	4 (17)	.208 [†]
Infectious complications	18 (30)	5 (23)	.590 [†]
Wound infection	8 (13)	4 (18)	
Intraabdominal infection	4 (7)	0	
Vaginal cuff cellulitis	2 (3)	0	
Pyelonephritis	4 (7)	1 (5)	
Pneumonia	0	0	
Postoperative length of stay (d)	4 (3–13)	5 (2–26)	.280
4 or fewer	31 (52)	11 (48)	
5–8	24 (40)	6 (26)	
9 or more	5 (8)	6 (26)	
Hospital readmission within 6 wk	7 (12)	3 (13)	1.000 [†]
Delayed reoperation [§]	5 (8)	3 (13)	.679 [†]
Early composite morbidity	28 (47)	17 (74)	.026
Late composite morbidity [†]	12 (20)	5 (22)	1.000 [†]

Eller Obstet Gynecol 2011

L'étude du placenta en échographie de dépistage

Au T1

- Aspect (habituel) du trophoblaste, prédominance antérieure ou postérieure

En cas d'antécédent de césarienne :

- Visibilité de la cicatrice
- Position du placenta par rapport à la cicatrice

Au T2

Au T3

- Aspect du placenta (habituel)
- Localisation du placenta : si le placenta est bas-inséré, fournir une description précise avec distance à l'orifice interne évaluée en millimètres.

Conférence Nationale
d'Echographie Obstétricale et Fœtale



2023

RAPPORT
et
RECOMMANDATIONS
-
RÉVISION 17 OCTOBRE 2023



C'est donc au T2 ou au T3 qu'un PAS peut être suspecté
Chez les patientes ayant un/des facteur(s) de risque

Ultrasound Obstet Gynecol 2016; 47: 271–275
Published online in Wiley Online Library (wileyonlinelibrary.com).

Editorial

Proposal for standardized ultrasound descriptors of abnormally invasive placenta (AIP)

S. L. COLLINS*†, A. ASHCROFT†, T. BRAUN‡, P. CALDA§, J. LANGHOFF-ROOS¶, O. MOREL**, V. STEFANOVIC††, B. TUTSCHEK‡‡ and F. CHANTRAINE§§¶¶, on behalf of the European Working Group on Abnormally Invasive Placenta (EW-AIP)

- Échographie 2D « gray scale »
 - 6 signes
- Échographie 2D Doppler couleur
 - 4 signes
- Échographie 3D
 - 5 signes dont 4 qui correspondent à des adaptations 3D des signes décrits en 2D

TABLE 2

Primary outcome—performance of the EW-AIP checklist for detection of PAS

Performance metric	All cases (n=78)	Excluding histologic accreta (n=68)
Sensitivity	76.7% (63.4–90.6)	84.7% (73.6–96.4)
Specificity	92.0% (63.4–99.9)	92.0% (83.2–99.9)
Positive likelihood ratio	9.6	10.6
Negative likelihood ratio	0.3	0.2

- Vessie pleine
- Voie abdominale et/ou vaginale
- Attention à l'appui sur la sonde
- Attention à la PRF

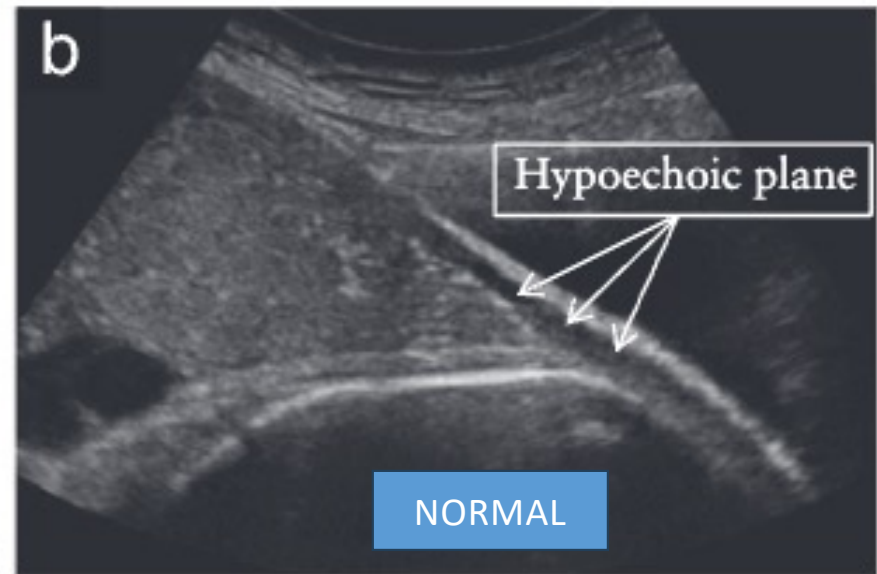
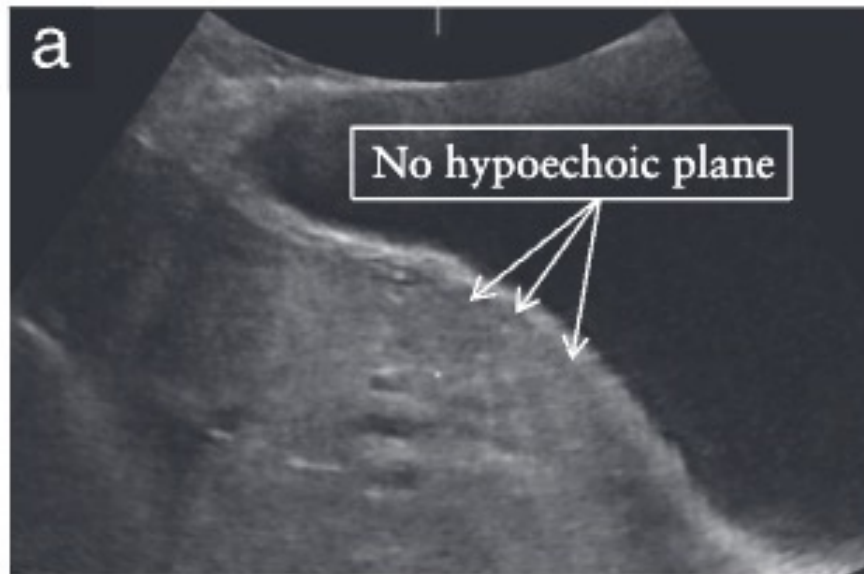
Validation of a sonographic checklist for the detection of histologic placenta accreta spectrum

Luke A. Gatta, MD; Sarah C. Ellestad, MD; Brita K. Boyd, MD; Sally Collins, BMBCh, DPhil; Brett D. Einerson, MD, MPH; Megan L. Stephenson, MD; Ibrahim Hammad, MD, MSCI; Megan S. Varvoutis, MD, MS; Anne West Honart, MD, MPhil; Jerome J. Federspiel, MD, PhD; Amanda M. Craig, MD; Anthony Swartz, BS, RDMS; Julia R. Salinaro, MD; Shakthi Unnithan, MS; Jeremy Weber, MS; Alaattin Erkanli, PhD; Jennifer B. Gilner, MD, PhD

(1) Disparition du liseré hypoéchogène

Loss of 'clear zone'

Loss, or irregularity, of hypoechoic plane in myometrium underneath placental bed ('clear zone')



- Aspect habituel : Liseré séparant le placenta du myomètre = intégrité de la plaque basale
- PAS: perte du liseré = perte de l'intégrité de la plaque basale
- Complicé pour les placentas postérieurs

FIGURE 6
Impact of probe pressure and bladder filling on placental bed ultrasound features

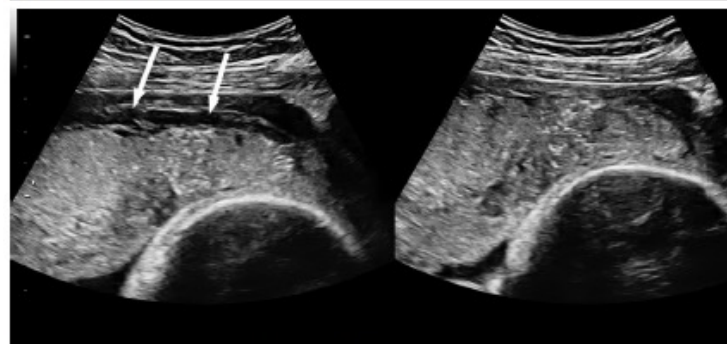


Transabdominal ultrasound longitudinal views of same part of placental (P) bed of low-lying P at 32 weeks using same machine settings. Full bladder (B) with A, minimal and B, increased probe pressure. C, Empty B and minimal probe pressure. Note changes in clear zone (arrows).

Jauniaux. Pathophysiology and ultrasound imaging of placenta accreta spectrum. Am J Obstet Gynecol 2018.

Attention à l'appui sur la sonde

FIGURE 7
Placental bed after multiple cesarean deliveries without and with probe pressure



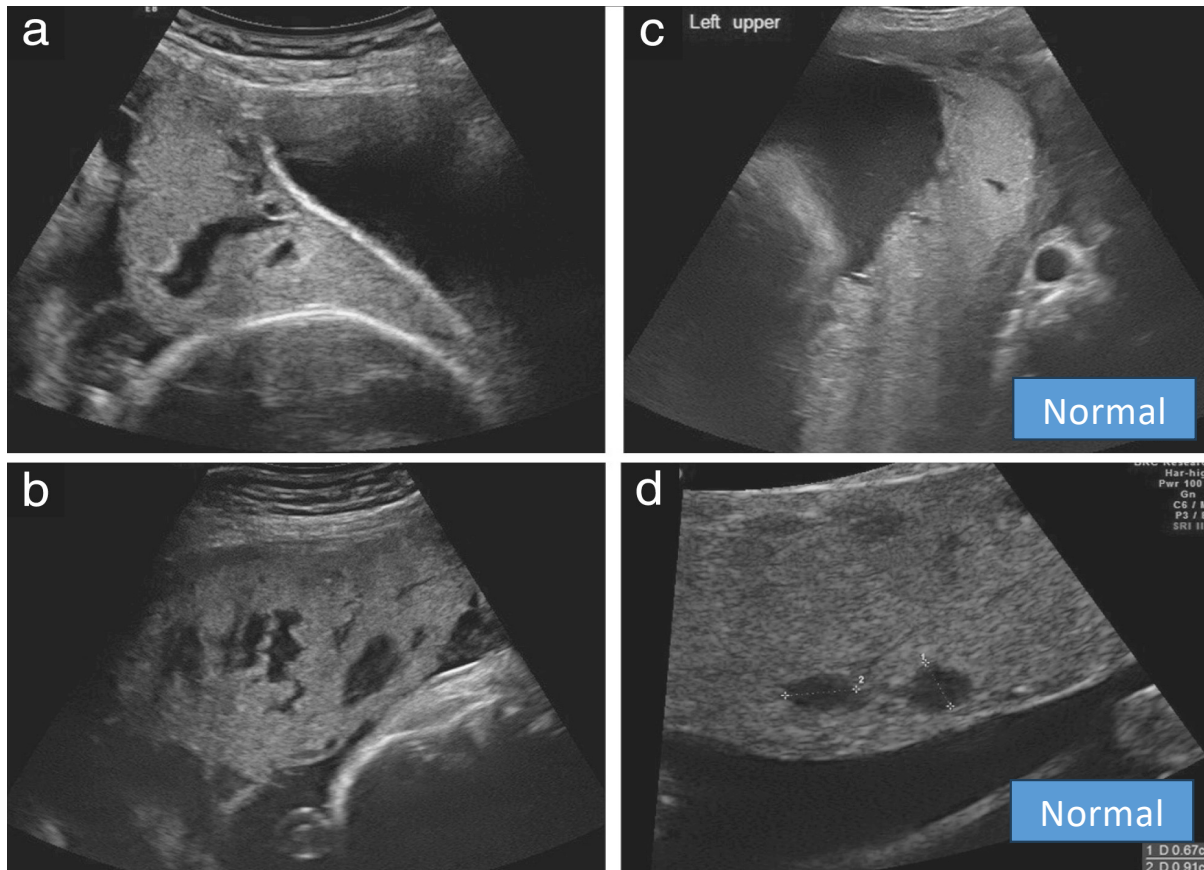
Transabdominal ultrasound longitudinal views of placental bed at 34 weeks in pregnancy after 3 prior cesarean deliveries showing changes on clear zone (arrows) with probe pressure (right).

Jauniaux. Pathophysiology and ultrasound imaging of placenta accreta spectrum. Am J Obstet Gynecol 2018.

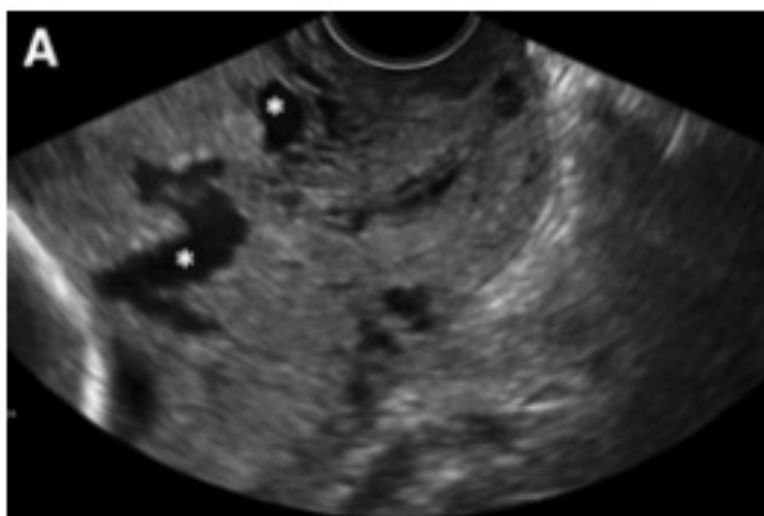
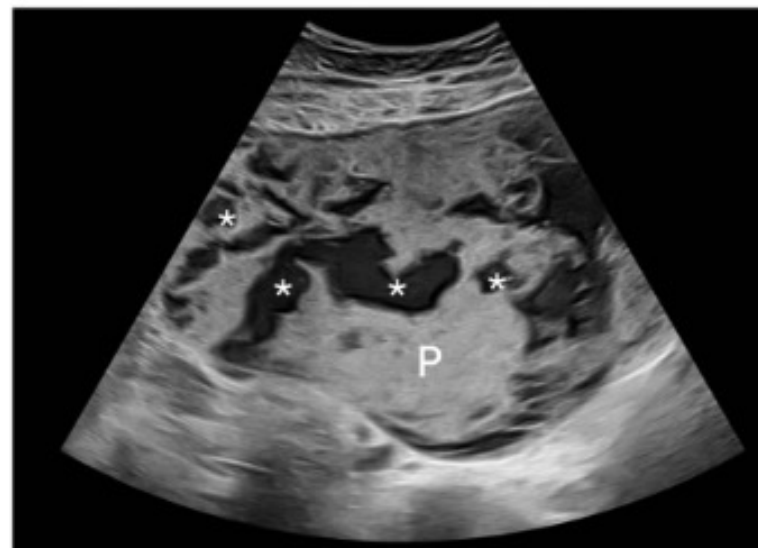
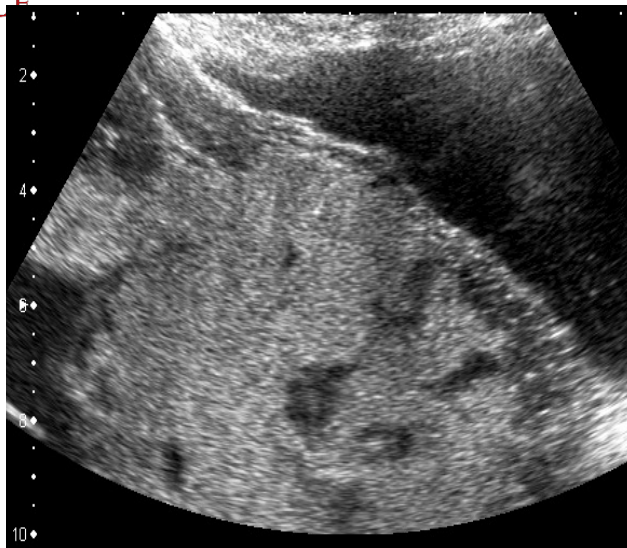
(2) Lacunes

Abnormal
placental lacunae

Presence of numerous lacunae including some that are large and irregular (Finberg Grade 3), often containing turbulent flow visible on grayscale imaging



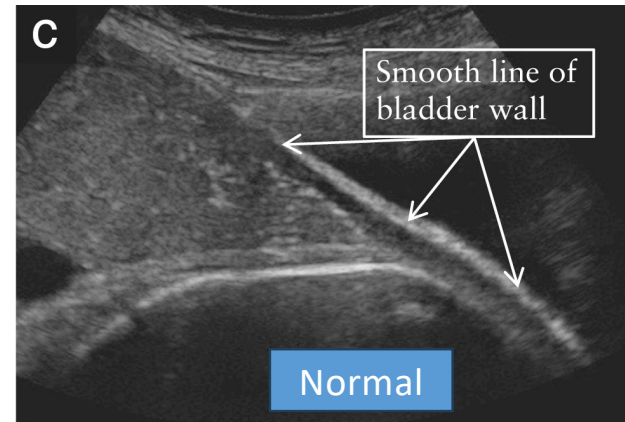
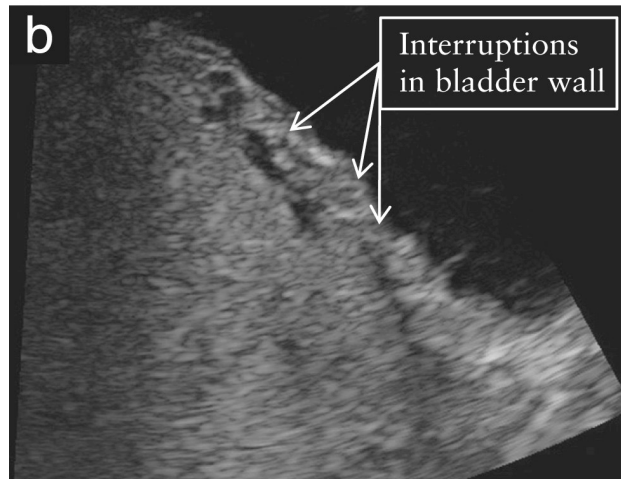
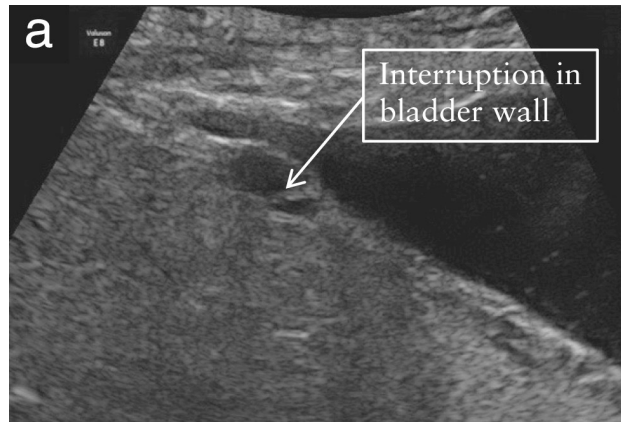
- Elles donnent au placenta un aspect de gruyère ("mangé par le mites").
- Non cerclées d'une couronne hyperéchogène (diag diff avec sinus veineux)
- Diffuses, petites et irrégulières plutôt linéaires que rondes.
- Parfois flux turbulent ou flux très lent (peu de valeur)
- Corrélation nombre / risque hémorragique



(3) Perte du liseré hyperéchogène correspondant au mûr vésical

Bladder wall
interruption

Loss or interruption of bright bladder wall (hyperechoic band or 'line' between uterine serosa and bladder lumen)



- Aspect normal: Persistance d'un liseré de sécurité basal + respect de la muqueuse vésicale
- PAS: perte du liseré échogène entre placenta et vessie
- Vessie pleine
- Voie vaginale
- Seulement PAS antérieurs



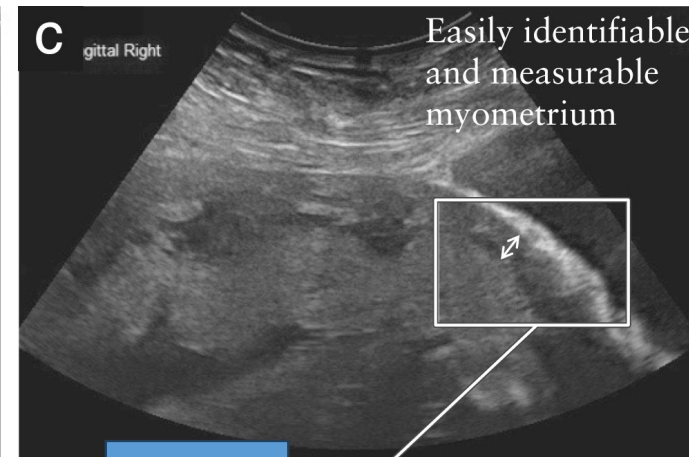
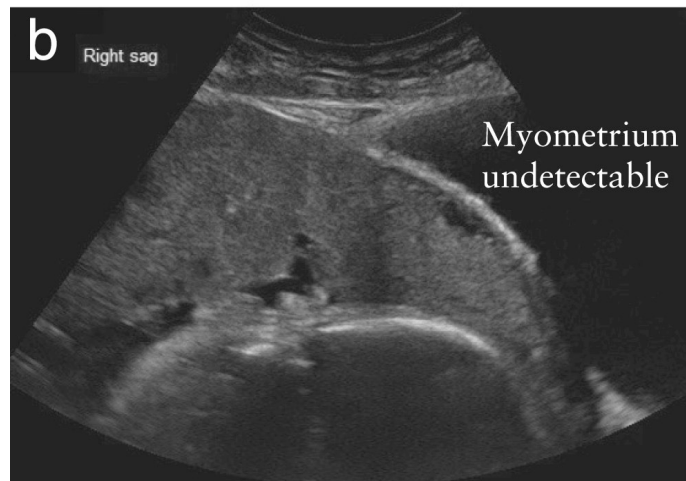
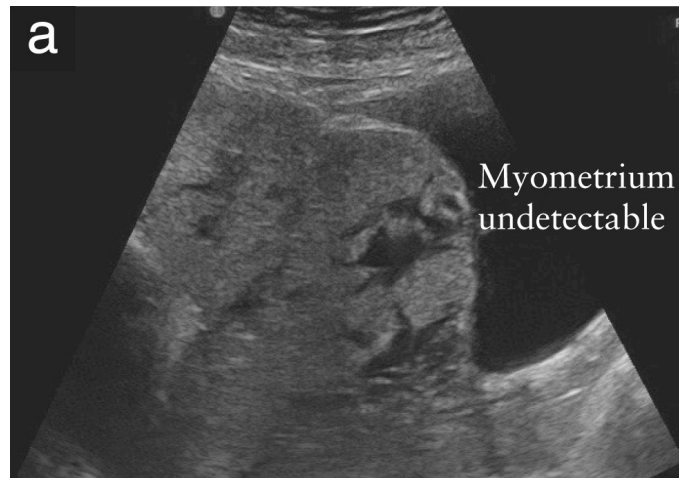
Fig. 2. Transvaginal ultrasonogram at 32 weeks of gestation in a patient with placenta accreta spectrum. Note the complete loss of the retroplacental clear zone. The bladder serosa here appears hyperechoic and intact (arrow). In addition, the placenta is well visualized, with an absence of the myometrial border at the ureterovesical region (circled).
Waller. Advances in Imaging Modalities for Diagnosing PAS. Obstet Gynecol 2025.



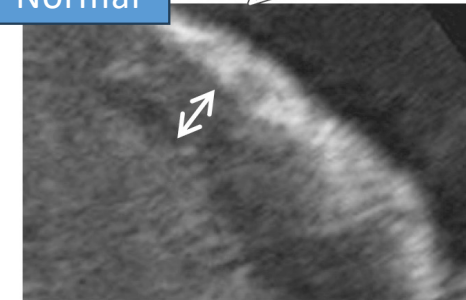
(4) Amincissement du myomètre

Myometrial
thinning

Thinning of myometrium overlying placenta to < 1 mm or undetectable



Normal

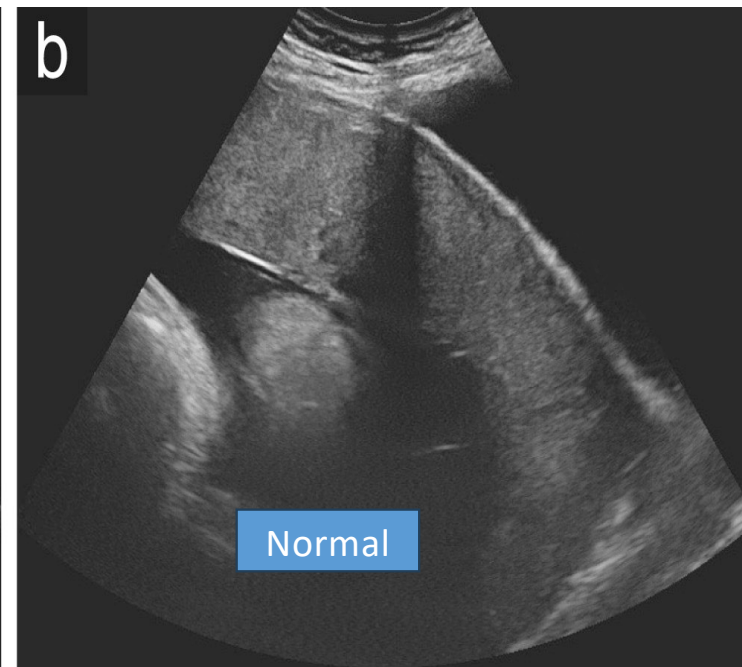
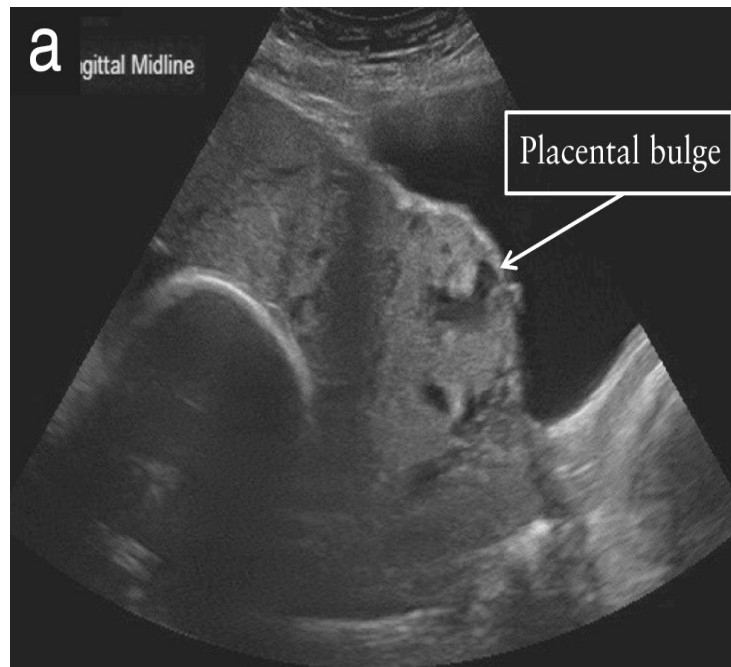


(5) Bombement du placenta dans la vessie

Placental bulge

(Figure 5)

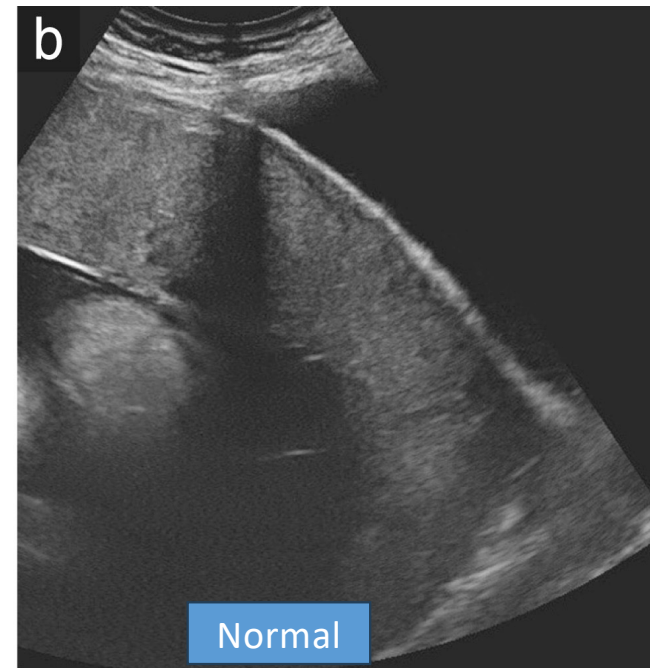
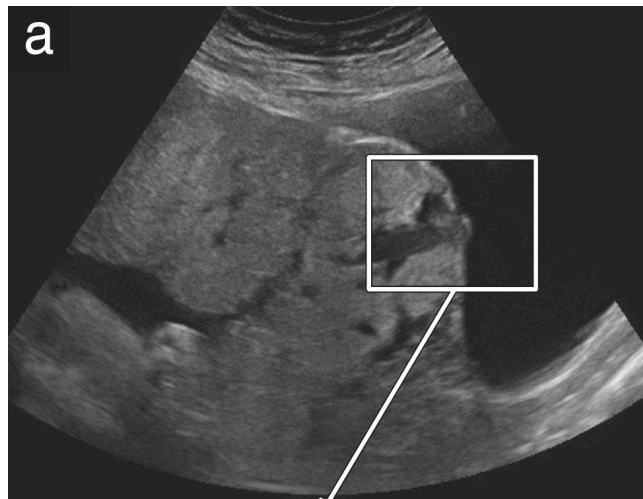
Deviation of uterine serosa away from expected plane, caused by abnormal bulge of placental tissue into neighboring organ, typically bladder; uterine serosa appears intact but outline shape is distorted



(6) Expansion exophytique du placenta dans la vessie

Focal exophytic
mass

Placental tissue seen breaking through uterine serosa and extending beyond it;
most often seen inside filled urinary bladder

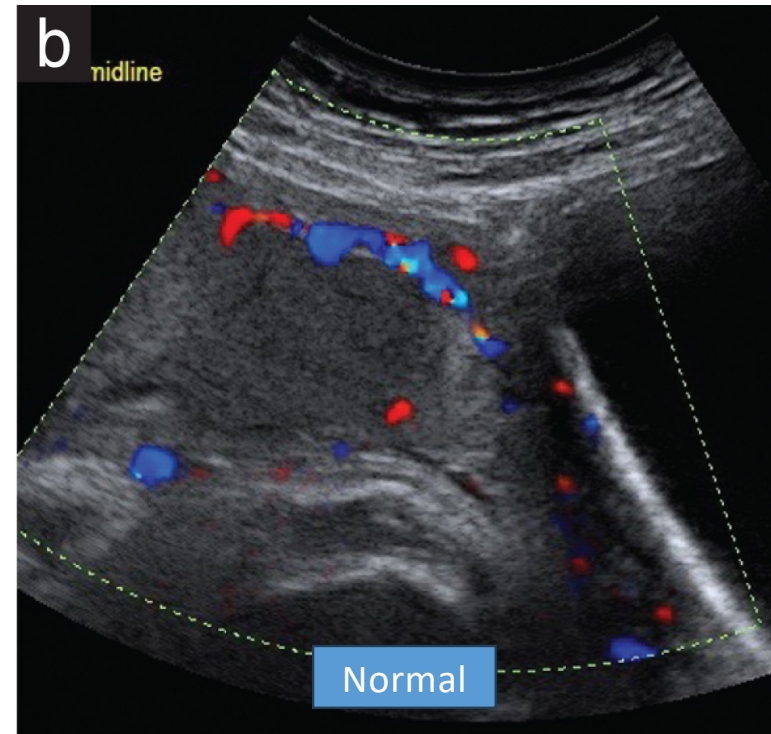
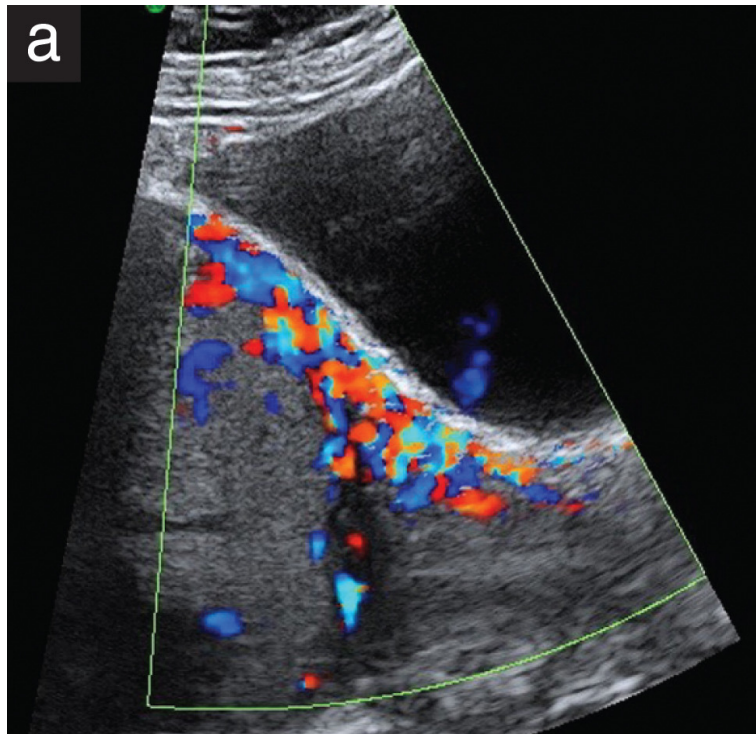


(1) Hypervascularisation utérovésicale (entre myomètre et mûr postérieur de la vessie)

Uterovesical
hypervascularity

(Figure 7)

Striking amount of color Doppler signal seen between myometrium and posterior wall of bladder; this sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact)

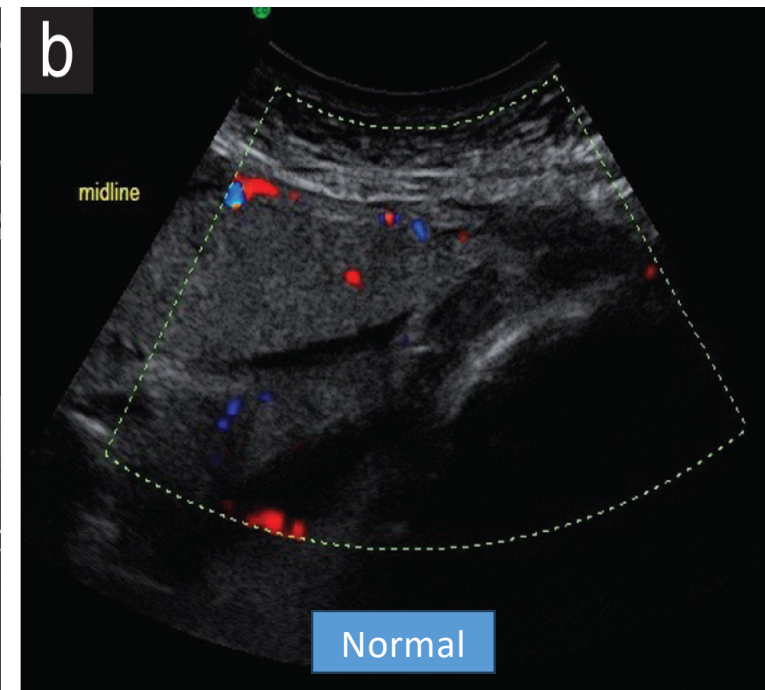
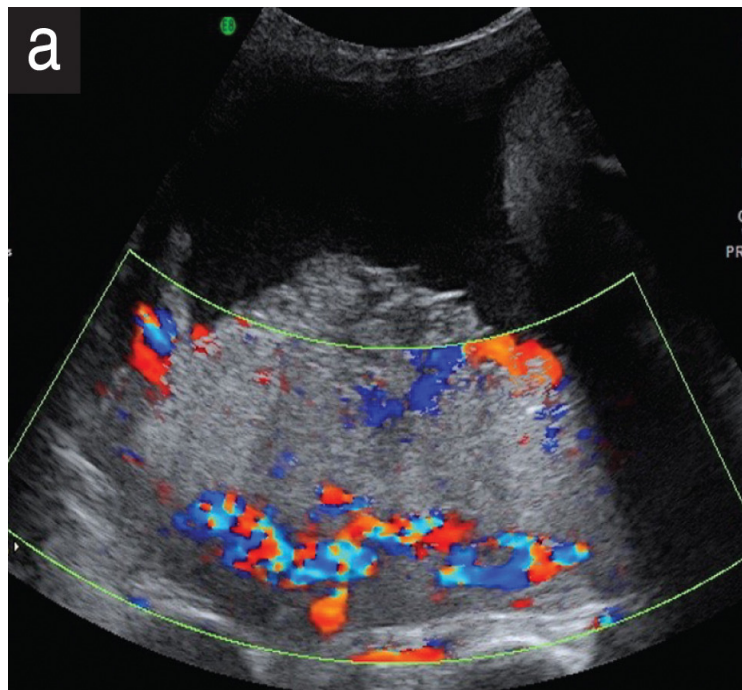


(2) Hypervascularisation du lit placentaire

Subplacental
hypervascularity

(Figure 8)

Striking amount of color Doppler signal seen in placental bed; this sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact)

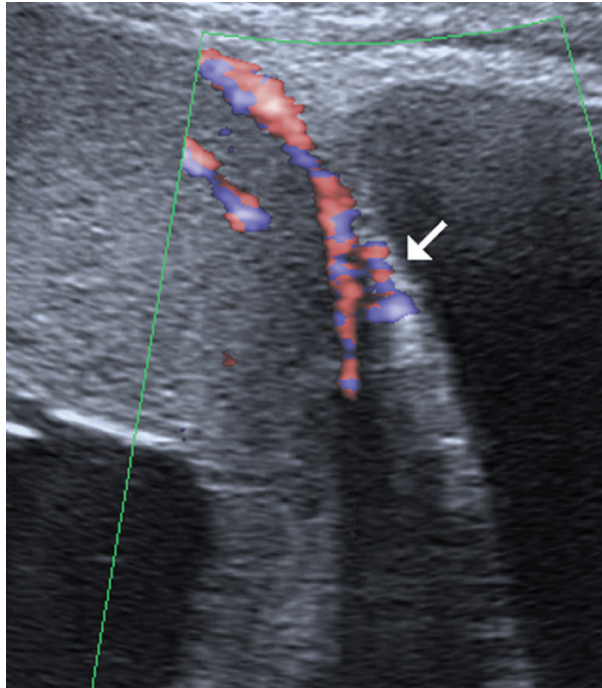


(3) Vaisseaux en pont entre le placenta et la vessie à travers le myomètre

Bridging vessels

(Figure 9)

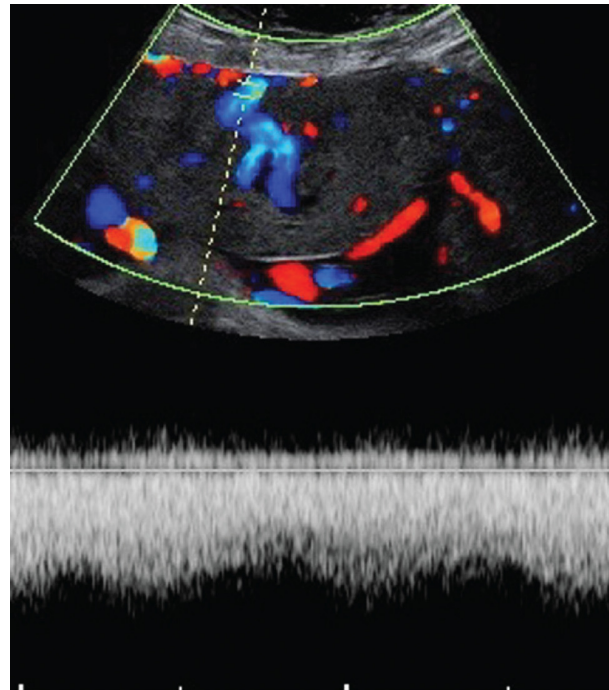
Vessels appearing to extend from placenta, across myometrium and beyond serosa into bladder or other organs; often running perpendicular to myometrium



(4) Vaisseaux nourriciers des lacunes placentaires

Placental lacunae
feeder vessels

Vessels with high-velocity blood flow leading from myometrium into placental
lacunae, causing turbulence upon entry



(1) Vascularisation intra placentaire

Intraplacental
hypervascularité

Complex, irregular arrangement of numerous placental vessels, exhibiting
tortuous courses and varying calibers

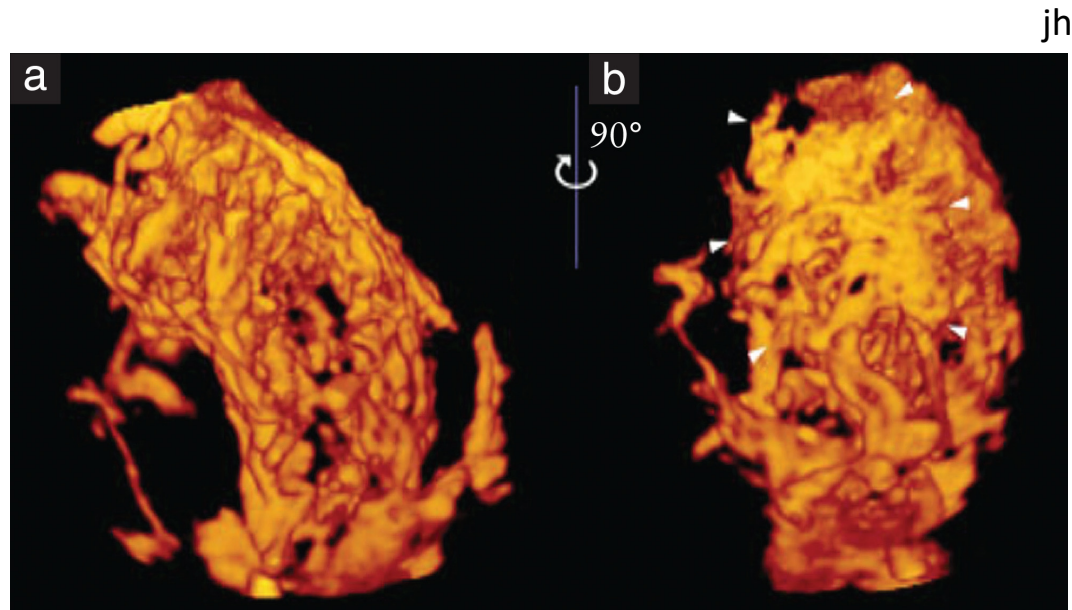
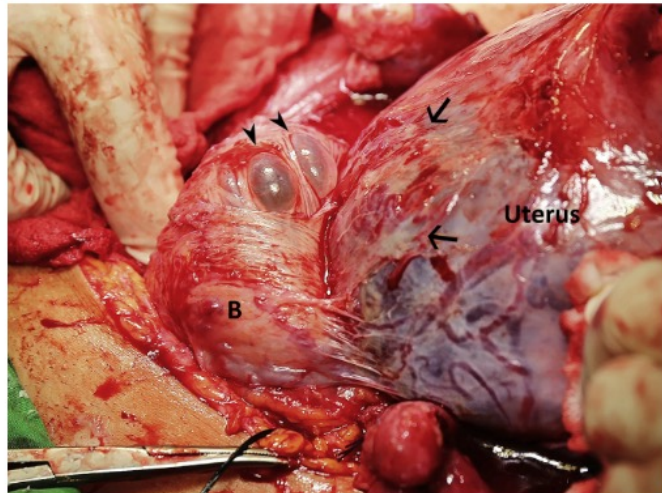




FIGURE 2
Bladder invasion



In this patient, the placenta breached the uterine serosa and into the detrusor muscle of the bladder (indicated by *B*). Even with careful dissection, part of the detrusor muscle (indicated by *arrows*) was attached on the side of the uterus and resulted in the exposure of bladder mucosa (indicated by an *arrowhead*) in the contralateral side of the bladder.

Shih et al. "Rail sign" of the placenta accreta spectrum. *Am J Obstet Gynecol* 2021.

OBSTETRICS

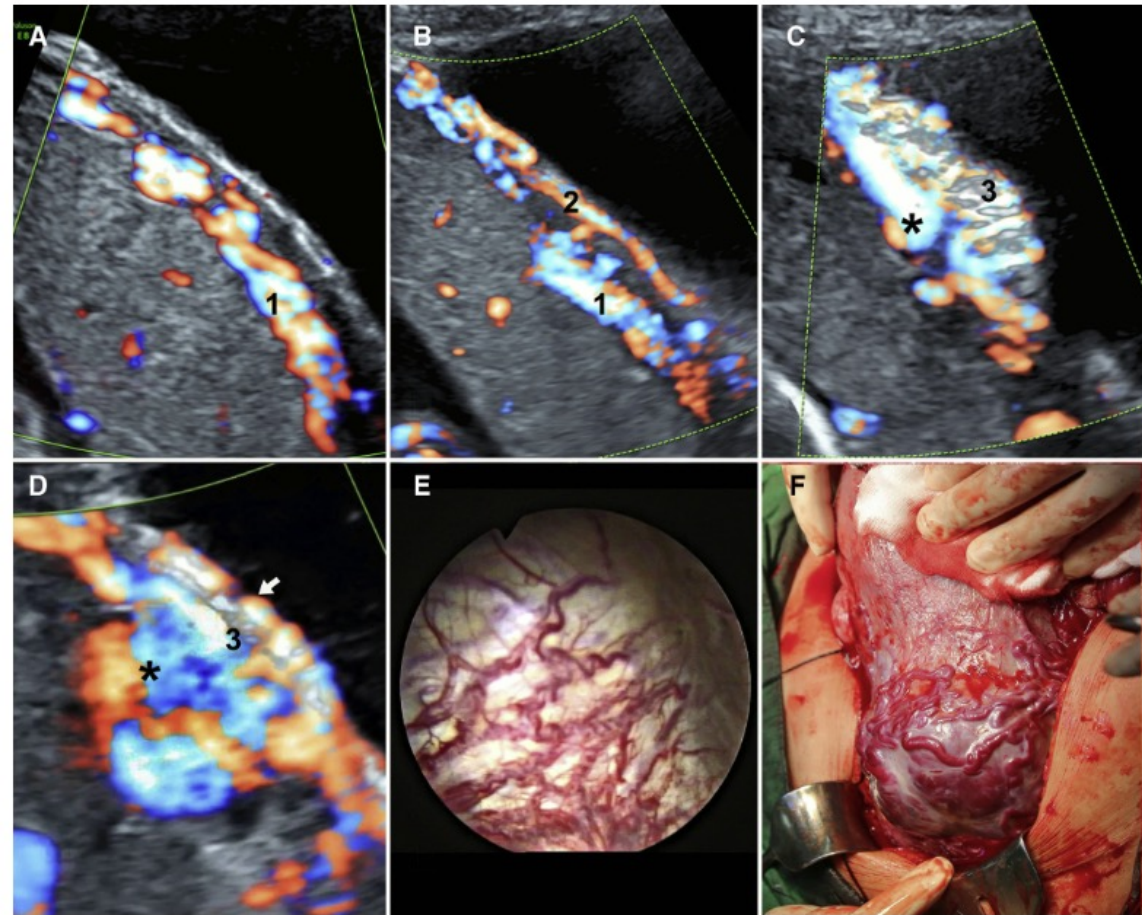
The "rail sign": an ultrasound finding in placenta accreta spectrum indicating deep villous invasion and adverse outcomes

Jin-Chung Shih, MD, PhD; Jessica Kang, MD; Shang-Jie Tsai, MSc; Jen-Kuang Lee, MD, PhD; Kao-Lang Liu, MD; Kuan-Ying Huang, MD



American Journal of Obstetrics & Gynecology SEPTEMBER 2021

FIGURE 1
Incremental angiogenesis of placenta accreta spectrum and the rail sign



A–B, Color Doppler ultrasound examination for a patient with placenta previa creta. **A,** In this patient, only subplacental hypervascularity (indicated by "1") existed at 30 weeks' gestation. **B,** The uterovesical hypervascularity (indicated by "2") appeared only after 33 weeks' gestation; **C–D,** Color Doppler interrogation for a patient with placenta previa percreta and bladder invasion at 34 weeks' gestation. **C,** Numerous newly formed, coral-shaped vessels (indicated by "3") extended perpendicularly from the placenta to the bladder mucosa (so-called bridging vessels). **D,** The subplacental and uterovesical hypervascularity merged (indicated by an *asterisk*) and even progressed into an aneurysm (*Video 2*). The parallel subplacental or uterovesical hypervascularity and neovascularization of the bladder mucosa (indicated by a *short arrow*), together with interconnected bridging vessels (indicated by "3"), constitute the "rail sign" in **(D)**. **(E)** and **(F)** were the corresponding images from cystoscopy and surgical findings of the patients in **(C)** and **(D)**.

Shih et al. "Rail sign" of the placenta accreta spectrum. *Am J Obstet Gynecol* 2021.

TABLE 2
Pathologic subtypes, perioperative management, and adverse outcomes for RS+ and RS− patients with placenta accreta spectrum

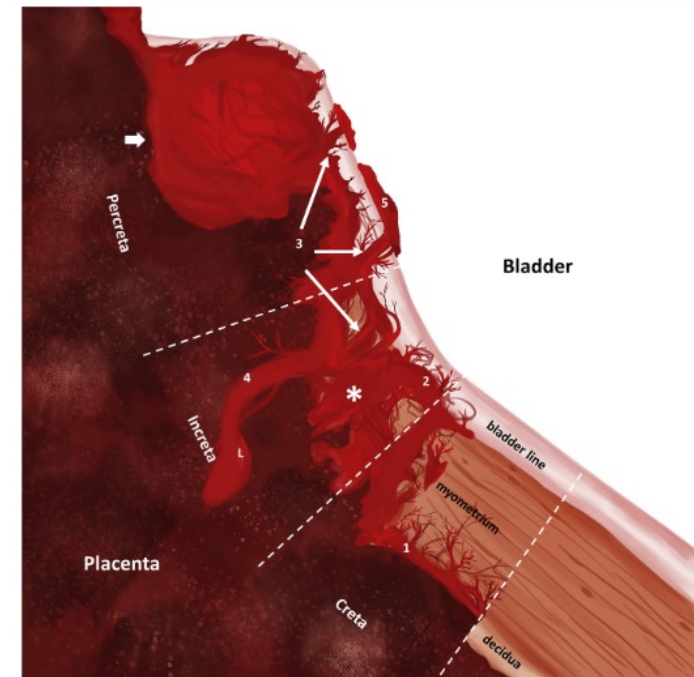
Variable	Total		Rail sign				OR	95% CI	Pvalue	+LR (probability change ^a)	−LR (probability change ^b)		
	n	%	Positive n	n=72 %	Negative n	n=61 %							
Final diagnosis													
Accreta	56	42.2	12	16.7	44	72.1	12.94 ^c	5.61–29.83 ^c	<.001 ^{c,d}	3.64 ^c	(increased by 20%–25%) ^c	0.28 ^a	(decreased by 25%–30%) ^c
Increta	40	30.0	26	36.1	14	23.0							
Percreta	37	27.8	34	47.2	3	4.9							
Preoperative vascular control ^e													
Positive	55	41.4	42	58.3	13	21.3	5.17	2.39–11.18	<.001 ^d	1.99	(increased by 15%)	0.38	(decreased by 20%–25%)
Negative	78	58.6	30	41.7	48	78.7							
Uterine artery embolization													
Positive	32	24.1	25	34.7	7	11.5	4.10	1.63–10.35	.002 ^d	1.68	(increased by 0%–15%)	0.41	(decreased by 15%–20%)
Negative	101	75.9	47	65.3	54	88.5							
Blood transfusion													
Positive	80	60.1	58	80.6	22	36.1	7.34	3.35–16.08	<.001 ^d	2.74	(increased by 15%–20%)	0.37	(decreased by 20%–25%)
Negative	53	39.9	14	19.4	39	63.9							
ICU admission													
Positive	34	25.6	24	33.3	10	16.4	2.55	1.10–5.89	.026 ^d	1.46	(increased by 0%–15%)	0.57	(decreased by 0%–15%)
Negative	99	74.4	48	66.7	51	83.6							
Surgery													
Hysterectomy	69	51.9	54	75.0	15	24.6	9.20	4.18–20.27	<.001 ^d	2.78	(increased by 15%–20%)	0.30	(decreased by 25%)
No hysterectomy	64	48.1	18	25.0	46	75.4							
Bladder invasion													
Positive	15	11.3	12	16.7	3	4.9	3.87	1.04–14.41	.033 ^d	1.57	(increased by 0%–15%)	0.41	(decreased by 15%–20%)
Negative	118	88.7	60	83.3	58	95.1							

CI, confidence interval; ICU, intensive care unit; +LR, positive likelihood ratio; −LR, negative likelihood ratio; OR, odds ratio; RS−, patients without a rail sign; RS+, patients with a rail sign.

^a Probability change after a positive rail sign (based on the estimation of the +LR value). ^b Probability change after a negative rail sign (based on the estimation of the −LR value). ^c OR, 95% CI, and P value of RS+ patients having an abnormally invasive placenta, placenta increta or placenta percreta compared with those of RS− patients (Pearson chi-square test). Positive and negative likelihood ratios of the rail sign predicting RS+ patients having an abnormally invasive placenta (placenta increta or placenta percreta). ^d Statistically significant (Pearson chi-square test). ^e Preoperative vascular control consisted of the placement of balloon occluder at the internal iliac artery, common iliac artery, or abdominal aorta before cesarean delivery to decrease blood loss during surgery. Cross clamping of the abdominal aorta before a hysterectomy is also included.

Shih et al. “Rail sign” of the placenta accreta spectrum. Am J Obstet Gynecol 2021.

FIGURE 4
A hypothetical model of the rail sign and other color Doppler findings in PAS



A hypothetical model is shown explaining the stepwise loss of maternal tissues along with the incremental dilatation and proliferation of vessels observed in the study. In this illustration, there were 7 different neovascularization types related to PAS as follows: (1) subplacental hypervascularity, (2) uterovesical hypervascularity, (3) bridging vessels, (4) lacuna-feeder vessel, and (5) neo-vascularization over bladder mucosa. The remaining 2 were placental lacunae (indicated by L) and the confluence of subplacental hypervascularity and uterovesical hypervascularity (indicated by an asterisk), which can become an aneurysm (indicated by an arrow) attached to the uterine serosa in advanced PAS.

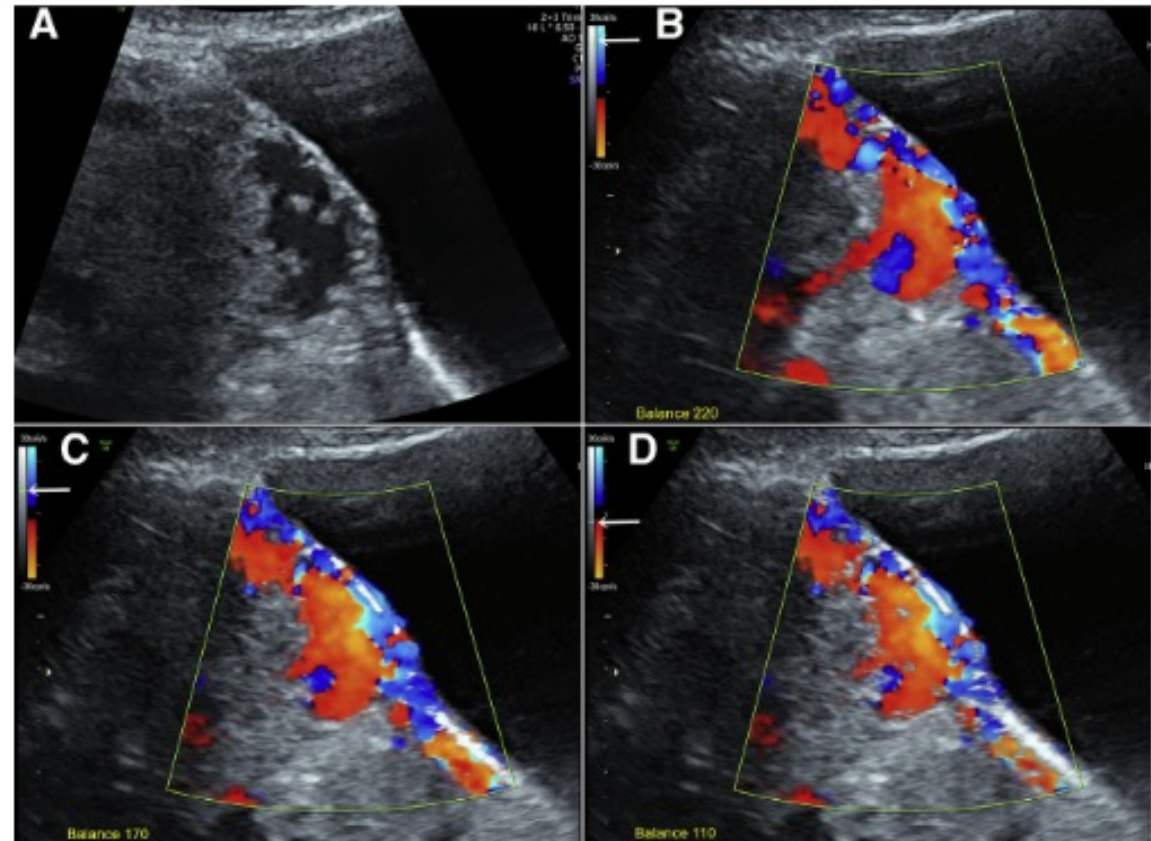
PAS, placenta accreta spectrum.

Shih et al. “Rail sign” of the placenta accreta spectrum. Am J Obstet Gynecol 2021.

Attention aux réglages

SUPPLEMENTAL FIGURE 4

The effect of color balance (threshold) on display of the rail sign

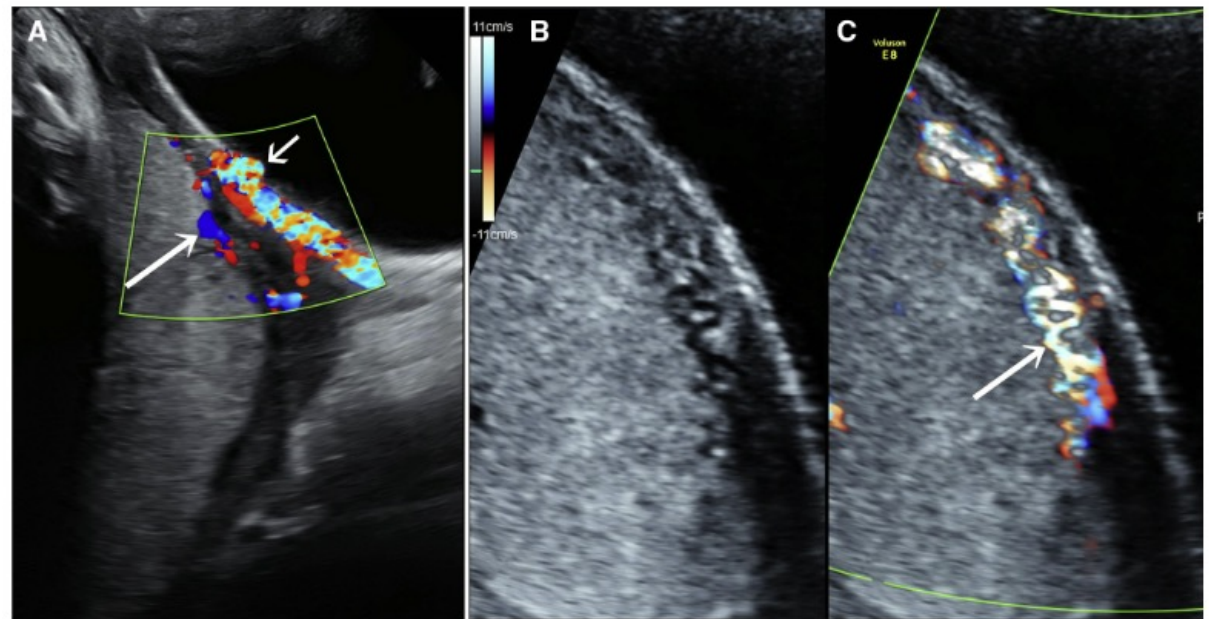


For optimal spatial resolution, the color balance was lowered to avoid confluence between vessels. **A**, gray-scale image, **B–D**, balance 220, 170, and 110 for the same region as (**A**). The authentic “rail sign” was only seen in (**C**) and (**D**). The arrow indicates the balance value of the color display.

Shih et al. “Rail sign” of the placenta accreta spectrum. *Am J Obstet Gynecol* 2021.

Attention aux faux
positifs

SUPPLEMENTAL FIGURE 5
False-positive images of the rail sign



A, A strong flow signal (peak flow velocity >180 cm/s) from the bladder varices (indicated by a *short arrow*) together with the subplacental hyper-vascularity (indicated by a *long arrow*) resembled the rail sign. However, there were no bridging vessels, and the gray-scale images do not indicate PAS. **B and C**, Gray-scale and color Doppler interrogation of a patient with placenta creta. The color signals, although mimicking the "railroad track," were distributed primarily over the subplacental region (indicated by a *long arrow*); therefore, it was not a true rail sign.

PAS, placenta accreta spectrum.

Shih et al. "Rail sign" of the placenta accreta spectrum. *Am J Obstet Gynecol* 2021.

Capacité de l'échographie à diagnostiquer un accreta ?

- Revue de la littérature et métaanalyse en **population à risque**
- 24 études pour 1509 grossesses
- Parmi les modalités échographiques, le Doppler couleur a montré la plus grande précision prédictive

Accuracy of ultrasound in prediction of abnormal placental adherence: a systematic review and meta-analysis

 Check for updates

Ekramy A. Mohamed, MD; Ruqayyah Ali Ahmed, MBBS; Nada Yasser Metwali, MBBS; Jumana Hussain Timraz, MBBS; Ahmed Mohamed, MBBS; Hossam Abdelfatah Mansour, MD

TABLE 7

Pooled values for sensitivity, specificity, positive and negative likelihood ratios (LR and LR-), and diagnostic odds ratio (DOR) for ultrasound overall, and the different ultrasound signs in the identification of invasive placentation

Diagnostic method	Sensitivity (95% CI) (%)	Specificity (95% CI) (%)	LR+ (95% CI)	LR- (95% CI)	DOR (95% CI)
Ultrasound (overall)	91.73 (88.3– 94.7)	97.95 (97.4– 98.6)	12.02 (7.2– 21.1)	0.17 (0.12– 0.24)	99.6 (49.9– 200.1)
Placental lacunae	78.43 (71.2– 84.2)	96.03 (95.2– 96.9)	5.53 (3.6– 9.2)	0.30 (0.21– 0.44)	25.33 (10.14– 65.9)
Loss of hypoechoic space	67.25 (60.4– 74.7)	96.77 (95.2– 97.6)	6.65 (3.4– 15.2)	0.39 (0.21– 0.7)	22.99 (7.9– 71.7)
Abnormalities of uterus– bladder interface	50.67 (42.5– 59.0)	99.77 (99.6– 99.9)	31.57 (9.2– 116.6)	0.52 (0.35– 0.78)	94.71 (36.6– 248.6)
Color Doppler abnormalities	91.75 (86.3– 95.8)	88.69 (85.7– 91.5)	8.78 (4.4– 19.5)	0.18 (0.11– 0.3)	70.03 (23.9– 209.2)

Mohamed. Accuracy of ultrasound in prediction of abnormal placental adherence: a systematic review and meta-analysis. *AJOG Glob Rep* 2024.

La connaissance de la forme de PAS est-elle importante ?

TABLE 3
Severe maternal morbidity according to form of abnormally invasive placentation: comparison between placenta percreta and placenta accreta group

	Percreta n = 51	Accreta n = 105	P
Composite acute maternal morbidity score, n (%)	44 (86.3)	28 (26.7)	<.01
• Hysterectomy during cesarean	27 (52.9)	22 (20.9)	<.01
• Delayed hysterectomy	17/24 (70.8)	4/83 (4.8)	<.01
• Packed RBC transfused ≥ 10 U	10 (19.6)	5 (4.8)	<.01
• Septic shock	5 (9.8)	2 (1.9)	.02
• Kidney injury	3 (5.9)	1 (0.9)	.07
• Cardiovascular failure	1 (1.9)	1 (0.9)	.6
• Admission to intensive care unit	14 (27.4)	3 (2.9)	<.01
• Death	2 (3.9)	0 (0)	.04

OBSTETRICS

AUGUST 2018 American Journal of Obstetrics & Gynecology

Placenta percreta is associated with more frequent severe maternal morbidity than placenta accreta



Louis Marcellin, MD, PhD; Pierre Delorme, MD; Marie Pierre Bonnet, MD, PhD; Gilles Grange, MD; Gilles Kayem, MD, PhD; Vassilis Tsatsaris, MD, PhD; François Goffinet, MD, PhD

Capacité de l'échographie à déterminer l'extension en profondeur

TABLE 2

Distribution of ultrasound sign used in diagnosis of placenta accreta in 53 series

Ultrasound signs	n (%)
Gray-scale parameters (n = 52)	
Loss of clear zone	50 (98.0)
Myometrial thinning	34 (66.7)
Placental lacunae	49 (96.1)
Bladder wall interruption	30 (58.8)
Placental bulge	11 (22.0)
Focal exophytic mass	13 (25.5)
CDI parameters (n = 42)	
Uterovesical hypervascularity	20 (47.6)
Subplacental hypervascularity	36 (85.7)
Bridging vessels	26 (61.9)
Lacunae feeder vessels	22 (52.4)

CDI, color Doppler imaging.

Jauniaux. Grading of accreta placenta on ultrasound imaging. *Am J Obstet Gynecol* 2016.

TABLE 1

Ultrasound signs identified in diagnosis of 38 case reports ranked according to depth of villous myometrial invasion

Ultrasound signs	PC n (%)	PI n (%)	PP n (%)
Gray-scale parameters (n = 13)			
Loss of clear zone	12 (92.3)	14 (87.5)	5 (55.6)
Myometrial thinning	6 (46.2)	11 (68.8)	3 (33.3)
Placental lacunae	5 (38.5)	9 (56.3)	9 (100)
Bladder wall interruption	1 (7.7)	2 (12.5)	2 (22.2)
Placental bulge	—	1 (12.5)	1 (11.1)
Focal exophytic mass	—	—	1 (11.1)
CDI parameters (n = 11)			
Uterovesical hypervascularity	1 (9.1)	2 (18.2)	2 (25.0)
Subplacental hypervascularity	5 (45.5)	9 (81.8)	6 (75.0)
Bridging vessels	10 (90.9)	7 (63.6)	2 (25.0)
Lacunae feeder vessels	2 (18.2)	6 (55.5)	4 (50.0)

CDI, color Doppler imaging; PC, placenta creta or vera; PI, placenta increta; PP, placenta percreta.

Jauniaux. Grading of accreta placenta on ultrasound imaging. *Am J Obstet Gynecol* 2016.

?

Lacunes= Risque Percreta

Anomalie jonction vésico-utérine= Risque Percreta

Accreta placentation: a systematic review of prenatal ultrasound imaging and grading of villous invasiveness

Eric Jauniaux, MD, PhD; Sally L. Collins, MBBS, PhD; Davor Jurkovic, MD; Graham J. Burton, MD

Ultrasound Obstet Gynecol 2022; 60: 381–389

Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/uog.24889.

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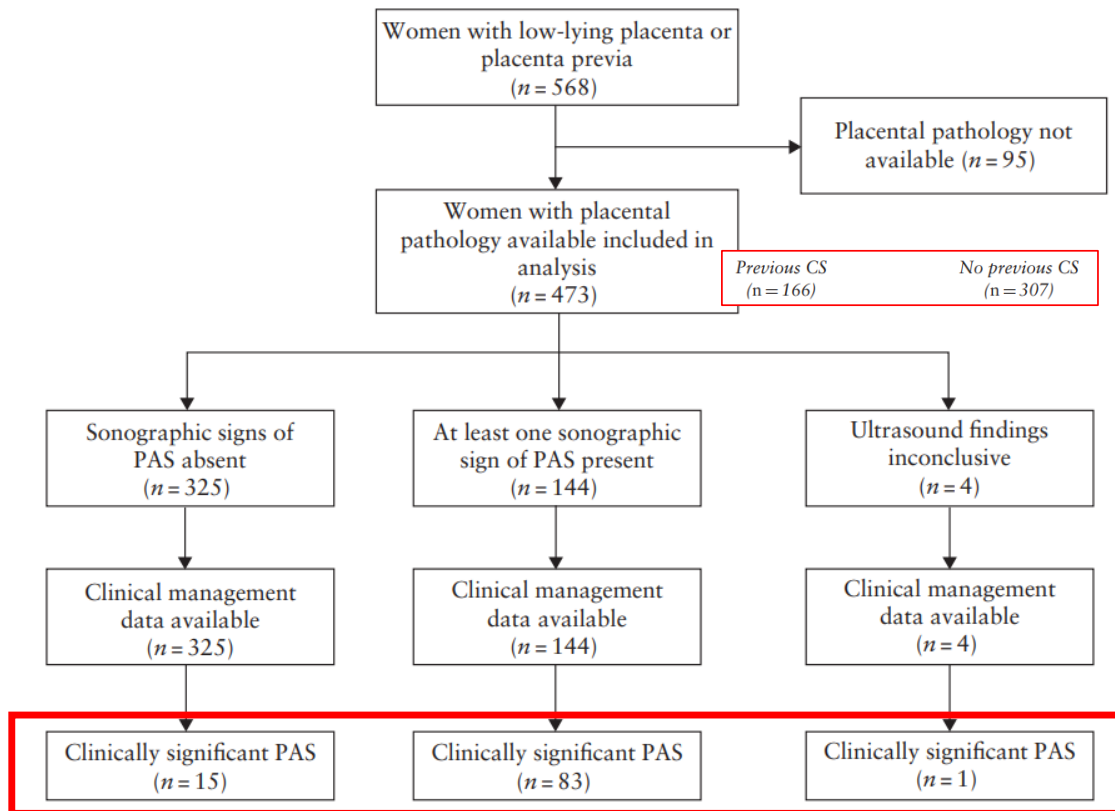
Third-trimester ultrasound for antenatal diagnosis of placenta accreta spectrum in women with placenta previa: results from the ADoPAD study

N. FRATELLI¹ , F. PREFUMO¹ , C. MAGGI¹ , C. CAVALLI¹, A. SCIARRONE²,
A. GAROFALO² , E. VIORA² , P. VERGANI³ , S. ORNAGHI³ , M. BETTI⁴ ,
I. VAGLIO TESSITORE³ , A. F. CAVALIERE⁵ , S. BUONGIORNO⁵ , A. VIDIRI⁵ , E. FABBRI⁶,
E. FERRAZZI^{7,8}, V. MAGGI⁷ , I. CETIN⁶ , T. FRUSCA⁹, T. GHI¹⁰ , C. KAIHURA⁹,
E. DI PASQUO⁹ , T. STAMPALIJA^{11,12} , C. BELCARO¹¹ , M. QUADRIFOGLIO¹¹ ,
M. VENEZIANO¹³, F. MECACCI¹⁴ , S. SIMEONE¹⁴ , A. LOCATELLI¹⁵ , S. CONSONNI¹⁶ ,
N. CHIANCHIANO¹⁷, F. LABATE¹⁸ , A. CROMI¹⁹ , E. BERTUCCI²⁰ , F. FACCHINETTI²⁰ ,
A. FICHERA¹ , D. GRANATA²¹, F. D'ANTONIO²² , F. FOTI²³, L. AVAGLIANO²⁴ ,
G. P. BULFAMANTE²⁴ , G. CALÌ²⁵  and the ADoPAD (Antenatal Diagnosis of Placental Adhesion Disorders) Working Group

La méthodologie

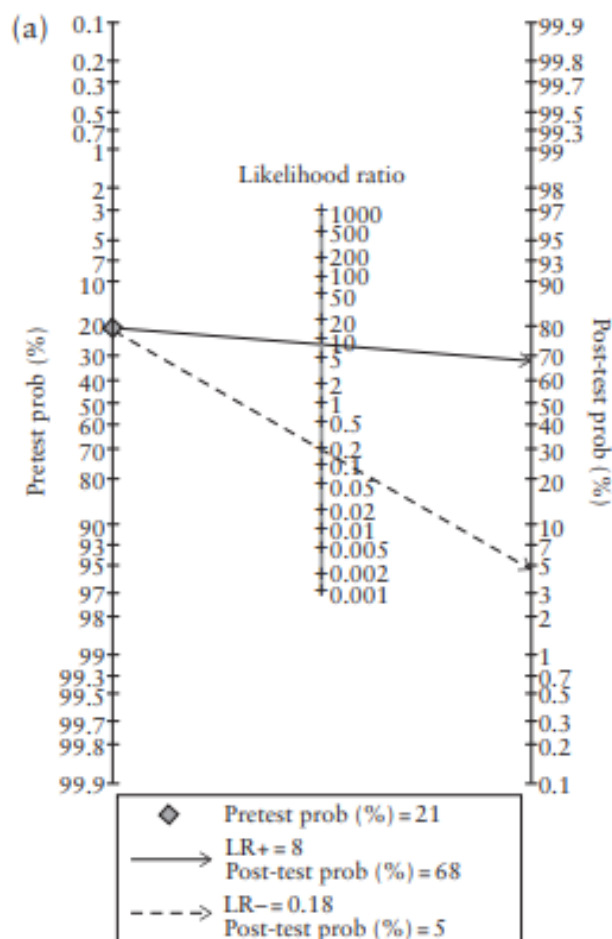
- Étude **prospective** multicentrique, 2014-2019
- Population de patiente avec **placenta praevia** recouvrant ou non (<2cm)
- Écho > **26SA**
- La suspicion échographique était basée sur la présence d'au moins l'un des signes suivants à l'échographie
 - **(1) disparition de l'espace hypoéchogène entre l'utérus et le placenta.**
 - **(2) interruption de l'interface hyperéchogène** entre la séreuse utérine et la paroi de la vessie ;
 - **(3) lacune** placentaire anormale
- Critère de jugement composite: anapath et non décollement avec nécessité de traitement d'une hémorragie

Les résultats

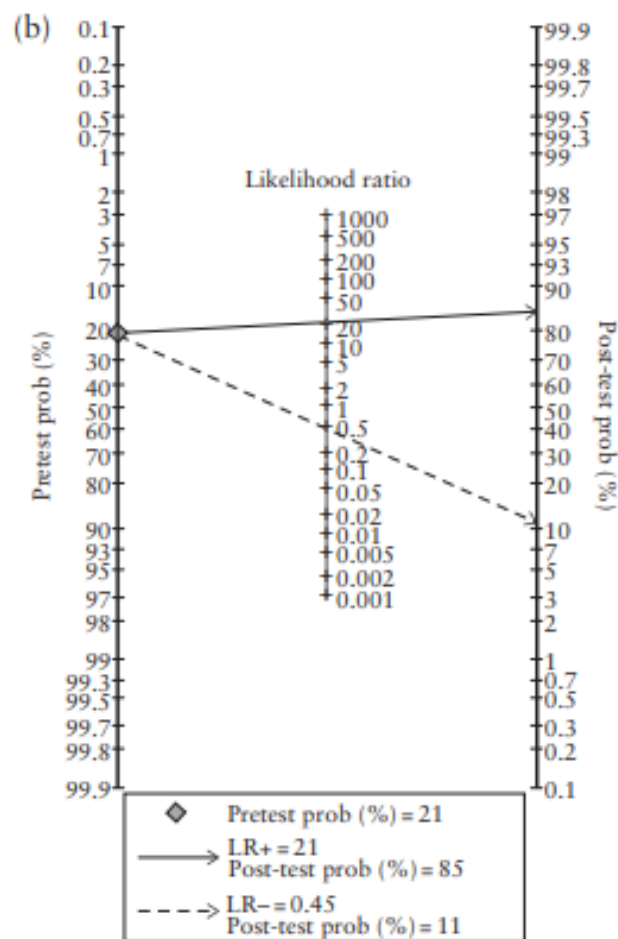


99 cas

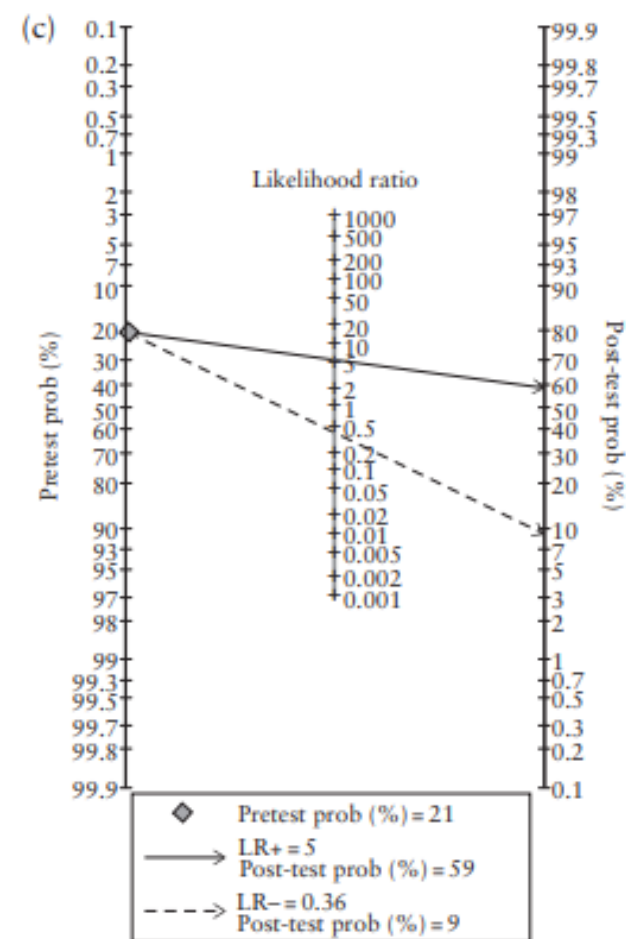
- **473 patientes** avec données complètes
 - Pas de signe dans 325/473 (69%) **4,6% de PAS**
 - Au moins 1 signe 144/473 (30%) **57,6% de PAS**
 - Sans conclusion 4/473 (1%)
- PAS cliniquement significatif diagnostiqué dans **99 cas (21 %)**
- L'âge gestationnel médian au moment de l'évaluation échographique était de 31,4 (écart interquartile 28,6-34,4) semaines.



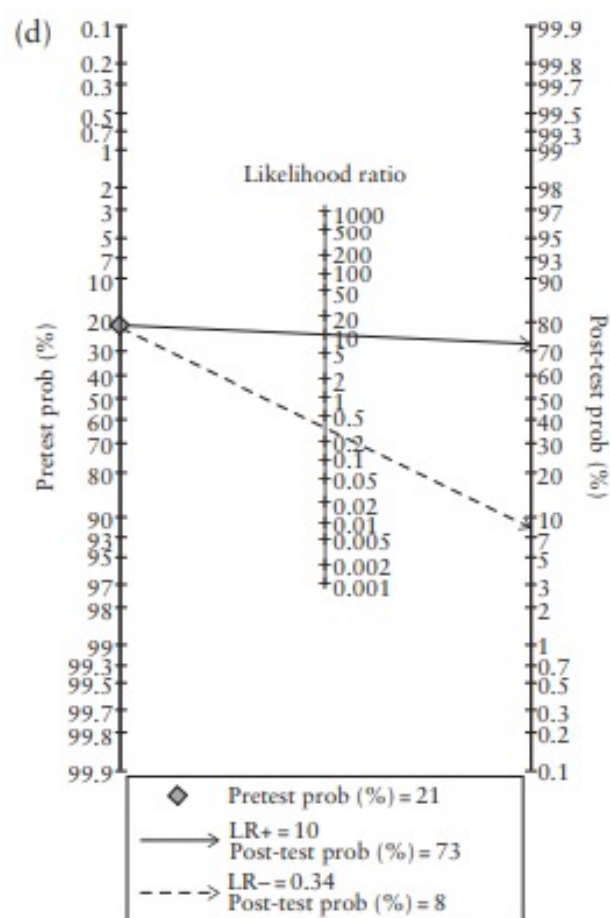
Interruption de la zone
hypoéchogène rétroplacentaire



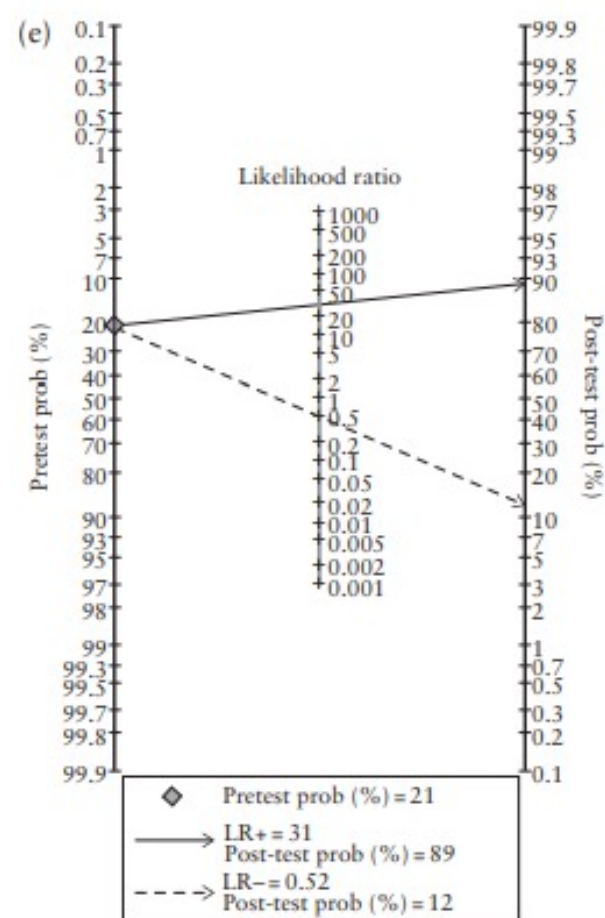
Interruption du liseré
hyperéchogène du mur vésical



Lacunes



interrupted hypoechogenic retroplacental space
 +
 abnormal placental lacunae



presence of all **three** markers

OBSTETRICS

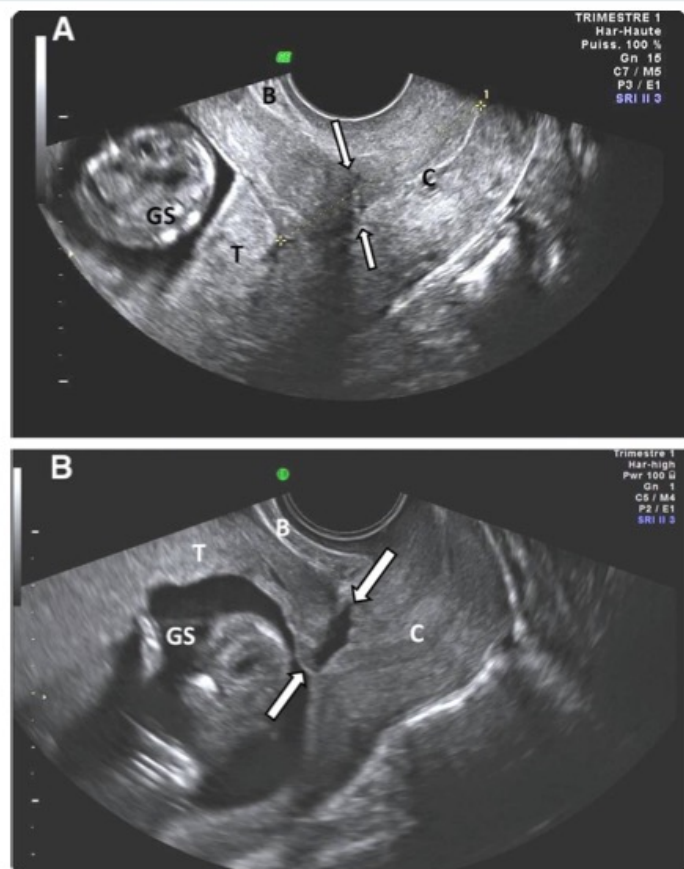
Screening for placenta accreta at 11-14 weeks of gestation

Julien J. Stirnemann, MD; Eve Mousty, MD; Gihad Chalouhi, MD; Laurent J. Salomon, MD, PhD;
Jean-Pierre Bernard, MD; Yves Ville, MD

DECEMBER 2011 *American Journal of Obstetrics & Gynecology*

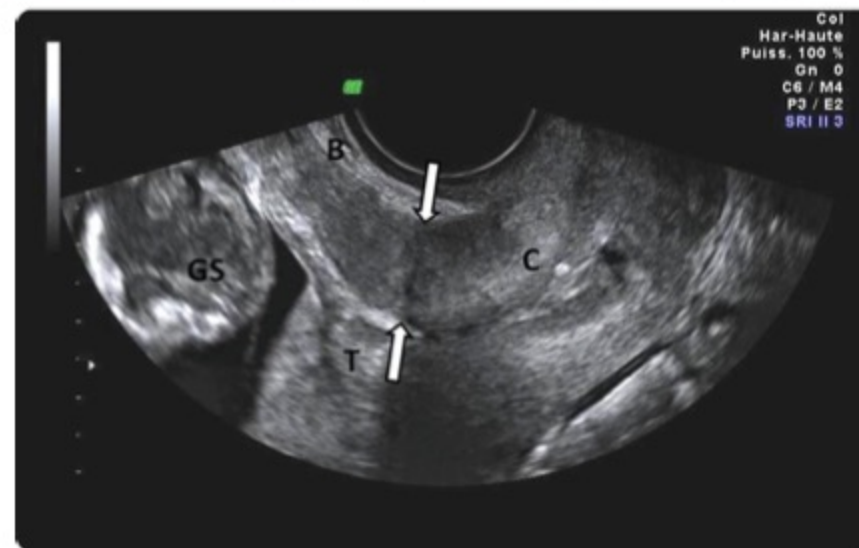
- Étude prospective / patiente avec ATCD de CS / 11-14SA
- Risque de PAS si trophoblaste en regard de la cicatrice
- 258 patientes : routine T1 → 1 cas de PAS a été découvert lors d'une nouvelle césarienne électorive
- 105 patientes: routine T1 + cicatrice et trophoblaste → Au total, 6 des 105 (5,8 %) à risque → 1 PAS vérifié

FIGURE 2
Protected and exposed scars



A, Protected scar with trophoblast (T) overlapping internal os. **B**, Exposed scar with nonoverlapping T.

FIGURE 1
Exposed scar with overlapping trophoblast (T) defining high-risk group

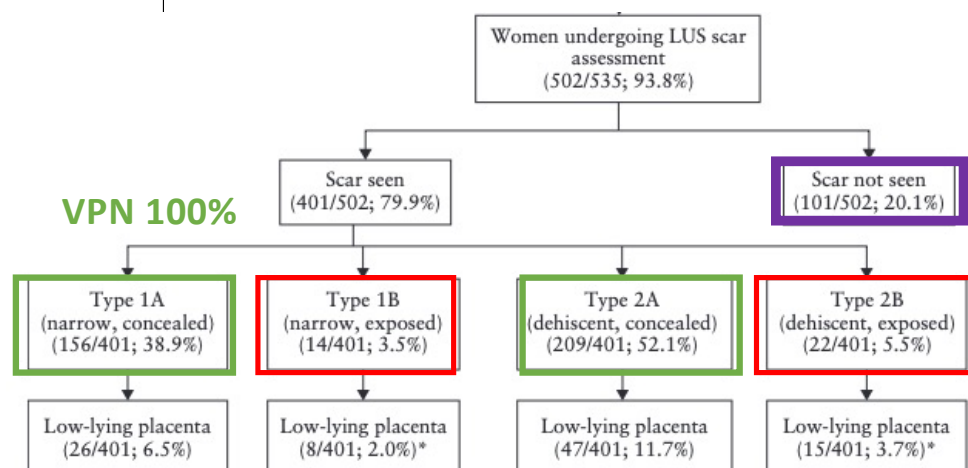




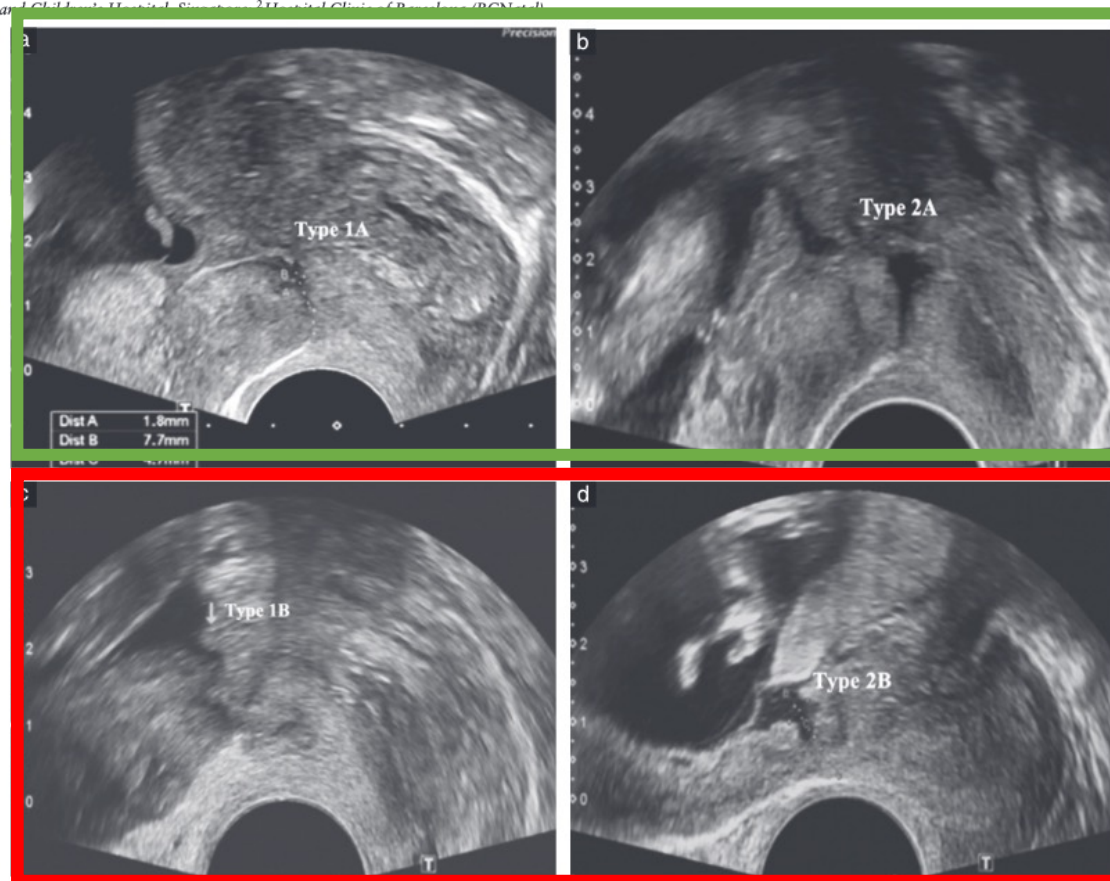
Lower uterine segment scar assessment at 11–14 weeks' gestation to screen for placenta accreta spectrum in women with prior Cesarean delivery

A. BHATIA¹, M. PALACIO², A. M. WRIGHT¹ and G. S. H. YEO¹

¹Department of Maternal–Fetal Medicine, KK Women's and Children's Hospital, Singapore; ²Hospital Clínic de Barcelona (CCNY), IDIBAPS, University of Barcelona, CIBER-ER, Barcelona



23 patientes à
risque → 3 PAS



The clinical outcome of cesarean scar pregnancies implanted "on the scar" versus "in the niche"

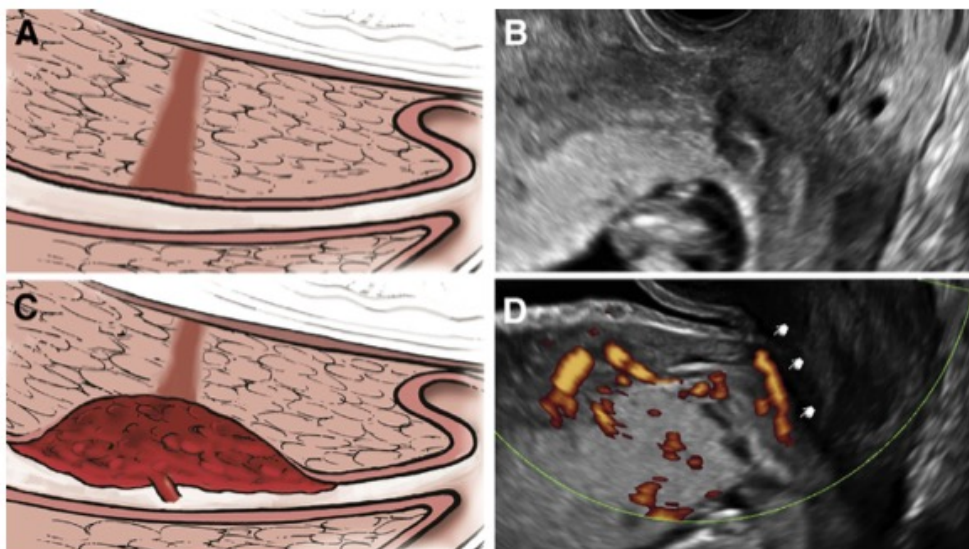


Andrea Kaelin Agten, MD; Giuseppe Cali, MD; Ana Monteagudo, MD; Johana Oviedo, MD; Joanne Ramos, RDMS; Ilan Timor-Tritsch, MD

Rétrospective. Grossesse sur cicatrice de césarienne diagnostiquée entre 5 et 9SA.

FIGURE 1

Cesarean scar pregnancies implanted "on the scar" Groupe A = 6



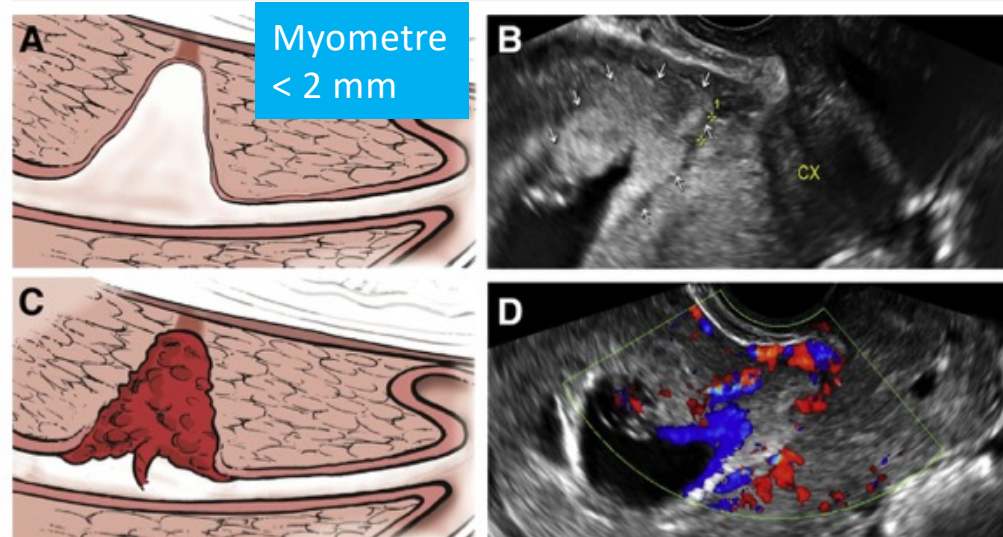
A, Image of a well-healed, nondeficient cesarean scar. **B**, grey scale ultrasound and **C**, color illustration of the placenta implanted "on top of" the scar. **D**, Power Doppler ultrasound image shows the rich vascular pattern in the area of the scar.

1 PAS

Kaelin Agten et al. Clinical outcome of CSPs implanted "on the scar" vs "in the niche." 17.

FIGURE 2

Cesarean scar pregnancies implanted "in the niche" Groupe B = 11



A, Image of a dehiscence cesarean scar ("niche"). **B**, grey scale ultrasound and **C**, color illustration of the placenta implanted "in the niche." **D**, Power Doppler ultrasound image shows the rich vascular pattern in the area of the scar.

10 PAS

Kaelin Agten et al. Clinical outcome of CSPs implanted "on the scar" vs "in the niche." 17.

Différence de performance selon le terme de la grossesse ?

- L'échographie a une **sensibilité de 86 %** (IC 95 %, 78-92 %) et une **spécificité de 63 %** (IC 95 %, 55-70 %) au cours du **premier trimestre**,
- une **sensibilité de 88 %** (IC 95 %, 84-91 %) et une **spécificité de 92 %** (IC 95 %, 85-96 %) au cours des **deuxième et troisième trimestres**,
- pour détecter le spectre du placenta accreta (PAS) dans une population à haut risque.

Sensibilité équivalente
Spécificité meilleure au T3

Ultrasound Obstet Gynecol 2024; 63: 723–730
Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/uog.27606



Trimester-specific diagnostic accuracy of ultrasound for detection of placenta accreta spectrum: systematic review and meta-analysis

K. HESSAMI¹, R. HORGAN², J. L. MUNOZ³, A. H. NOROOZNEZHAD⁴, A. A. NASSR³, K. A. FOX⁵, D. DI MASCIO⁶, M. CALDWELL¹, V. CATANIA¹, F. D'ANTONIO⁷ and A. Z. ABUHAMAD²

- *Autres « outils » aidant au diagnostic*
 - **IRM**
 - **Biologie (...)**
- *Impact de la suspicion diagnostique:*
 - **« confirmation » diagnostique par un opérateur « entraîné »**
 - **IRM (éventuellement)**
 - **Choix du lieu d'accouchement**
 - **Choix de l'équipe selon ses compétences**
 - **Choix du terme**
 - **Information de la patiente**
 - **Choix de la patiente de la PEC (conservateur, radical)**
 - ***In fine* ... amélioration du pronostic maternel (physique, psychologique)**