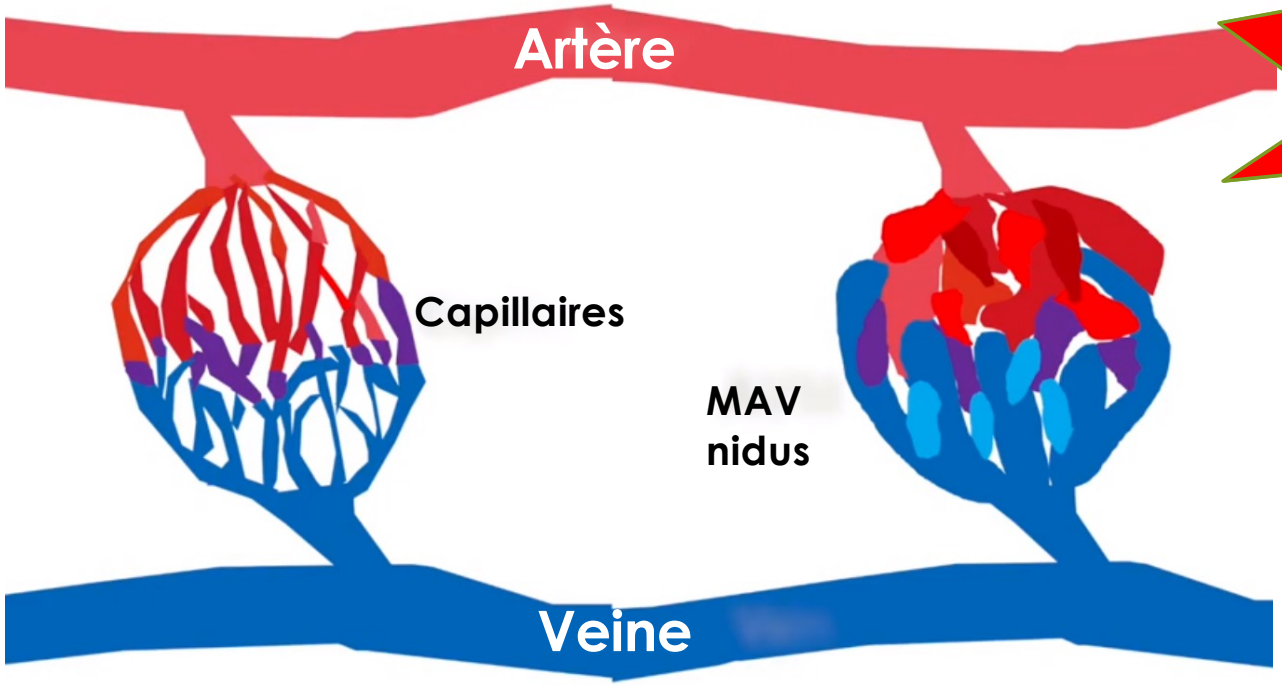
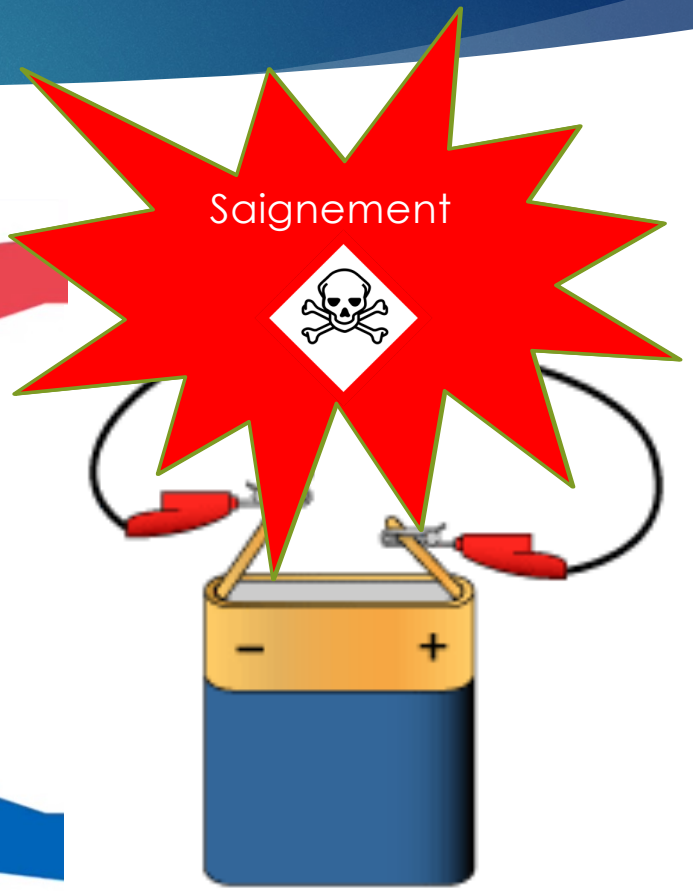
Prise en charge endoscopique des Anomalies vasculo-utérine

PR HASSINE SABER ABOUDA

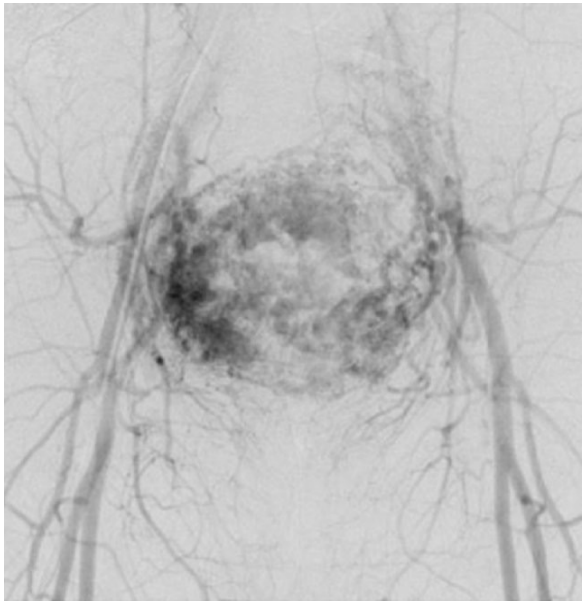
CENTRE DE MATERNITÉ ET DE NÉONATOLOGIE DE TUNIS , SERVICE C

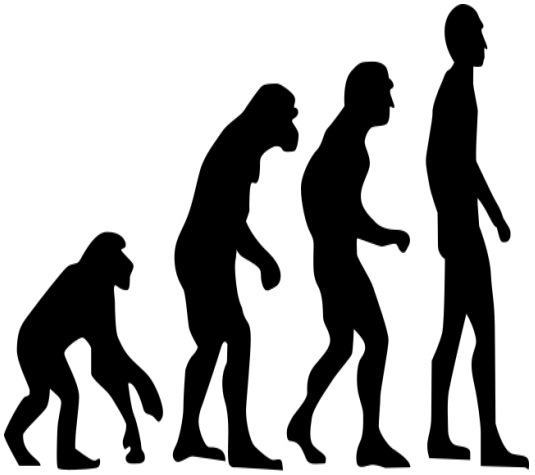
MAVU

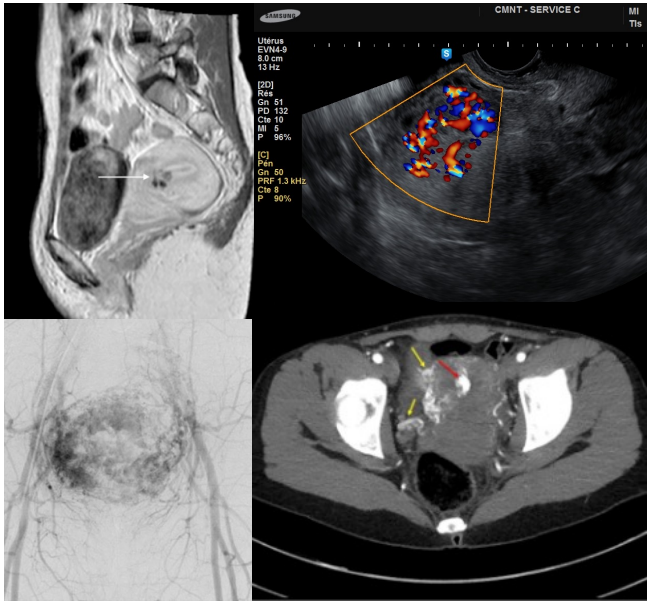




MAV → EMV







MAV

EMV

Original Research ajog.org

OBSTETRICS

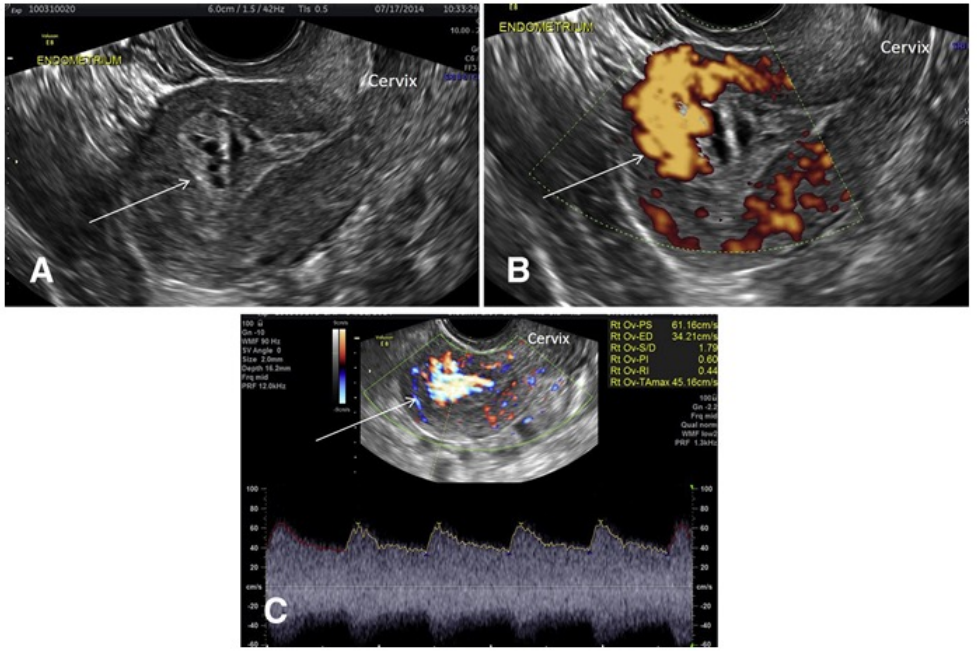
Ultrasound diagnosis and management of acquired uterine enhanced myometrial vascularity/arteriovenous malformations

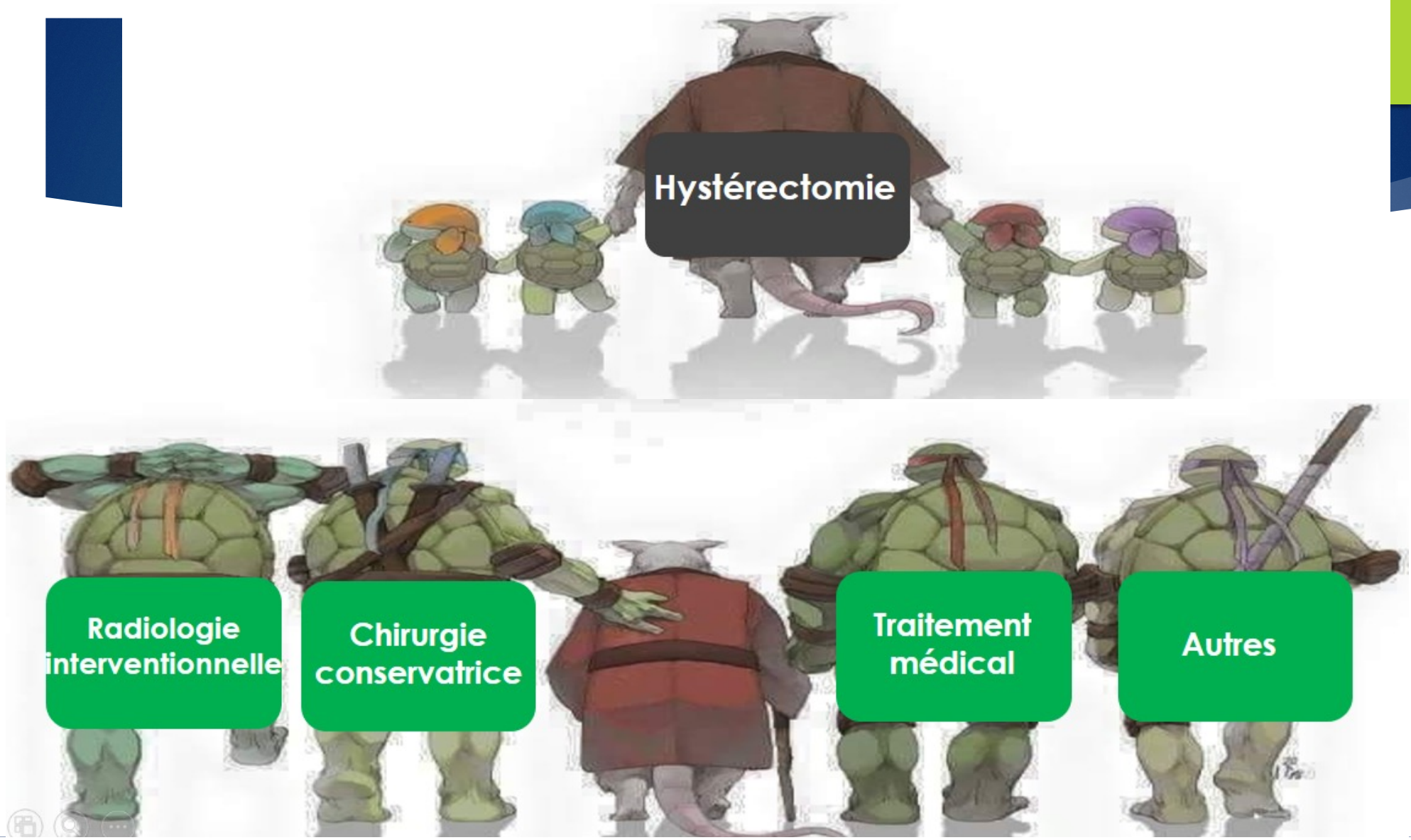
Ilan E. Timor-Tritsch, MD; Meagan Campol Haynes, MD, MPH; Ana Monteagudo, MD; Nizar Khatib, MD; Sándor Kovács, MD

BACKGROUND: Arteriovenous malformation is a short circuit between an organ's arterial and venous circulation. Arteriovenous malformations are classified as congenital and acquired. In the uterus, they may appear after curettage, cesarean delivery, and myomectomy among others. Their clinical feature is usually vaginal bleeding, which may be severe, if curettage is performed in unrecognized cases. Sonographically on 2-dimensional grayscale ultrasound scanning, the pathologic evidence appears as irregular, anechoic, tortuous, tubular structures that show evidence of increased vascularity when color Doppler is applied. Most of the time they resolve spontaneously; however, if left untreated, they may require involved treatments such as uterine artery embolization or hysterectomy. In the past, uterine artery angiography was the gold standard for the diagnosis; however, ultrasound scanning has diagnosed successfully and helped in the clinical management. Recently, arteriovenous malformations have been referred to as enhanced myometrial vascularities.

FIGURE 1

The 3-dimensional ultrasound imaging sequence to diagnose an arteriovenous malformation




Hystérectomie
Radiologie interventionnelle
Chirurgie conservatrice
Traitement médical
Autres

Objectifs du traitement

Pertes sanguines

Fertilité


Radiologie interventionnelle
Chirurgie conservatrice
Traitement médical
Autres

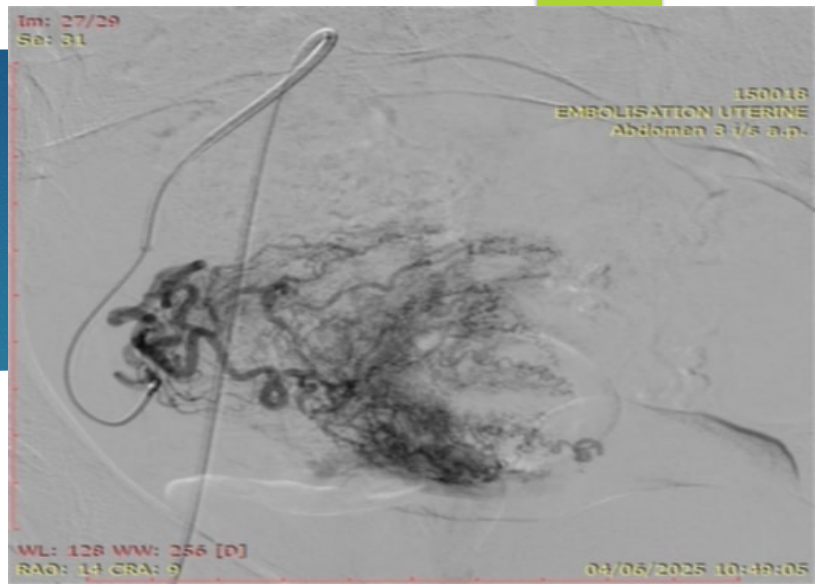
Journal of Personalized Medicine

MDPI

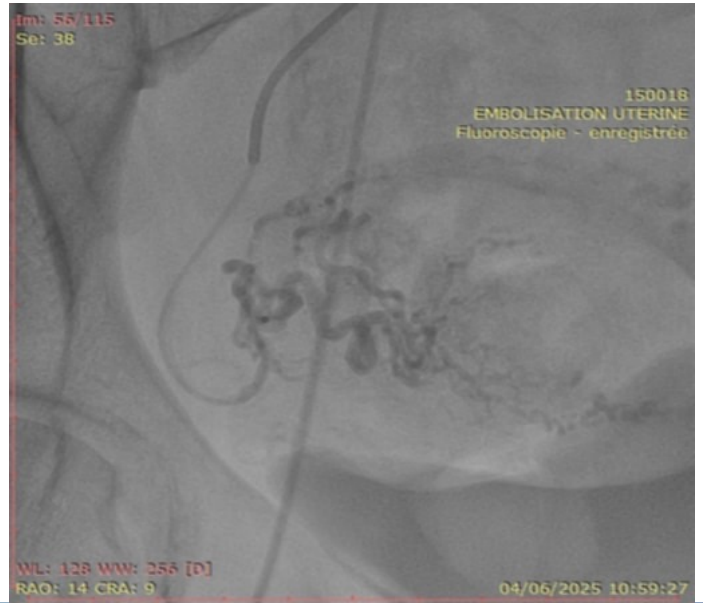
Article

Uterine Artery Embolization of Uterine Arteriovenous Malformation: A Systematic Review of Success Rate, Complications, and Posterior Pregnancy Outcomes

Francisco Javier Ruiz Labarta [1,2,3,4], María Pilar Pintado Recarte [1,2,3,4], Manuel González Leyte [3,5], Coral Bravo Arribas [1,2,3,4,*], Arturo Álvarez Luque [3,5], Yolanda Cuñarro López [1,2,3,4], Cielo García-Montero [6,7], Oscar Fraile-Martinez [6,7], Miguel A. Ortega [6,7,*,†] and Juan A. De León-Luis [1,2,3,4,†]



- 371 patientes, 95 études, traitées par embolisation artérielle utérine (UAE)
- **Complications majeures** : environ **1,6 %** (notamment embolie pulmonaire)
- **Taux de succès :**
  - Succès primaire (après 1ère embolisation) : **79,2 %**
  - Succès secondaire (après embolisations répétées) : **66,7 %**
  - Taux global **: 88,4 %**
- **Traitement ultérieur après échec** : parmi les 43 patientes échouées, 72 % ont nécessité une hystérectomie
- **Facteurs influençant le succès** :
  - Amélioration des techniques après 2010 : 81,5 % vs 69,6 % avant 2010 ($p < 0,05$)
  - Moins de succès secondaire comparé au primaire → plus l'embolisation est tardive, plus le risque d'échec augmente



Embolisation temporaire + hystéroscopie

- Embolisation temporaire (résorbable) a été effectuée, suivie de **hystéroscopie opératoire**, permettant une exérèse du nidus sous un contrôle hémorragique maîtrisé.

- Sur une revue de la littérature, seules **2 patients sur 125** avaient bénéficié d'une approche combinée similaire .

Temporary Uterine Artery Embolization Followed by Hysteroscopy to Treat a Case of Acquired Uterine Arteriovenous Malformation (UAVM): Case Report with Systematic Literature Review

Catena U[1], Romito I[1*], Mastrovito S[1], Iacobelli V[1], Campolo F[2], Ianieri MM[1], Cina A[3], Scambia G[1]

Rôle de l'hystéroscopie après embolisation

- Une **séquence UAE → hystéroscopie**
- Réduire les risques, raccourcir le suivi, et vérifier/traiter la cavité utérine après le geste radiologique
- L'hystéroscopie permet de :
  - Lever le doute sur la présence de **produits trophoblastiques résiduels**,
  - Retirer des fragments ou **traiter une cavité non stérile**,
  - Appliquer un **gel anti-synéchies**, limitant les adhérences
  - Après hystéroscopie, les patientes récupèrent plus rapidement et la période de suivi est plus courte avec **moins de patientes perdues de vue**

Scientific Research Publishing

Open Journal of Obstetrics and Gynecology, 2021, 11, 1565-1580
https://www.scirp.org/journal/ojog
ISSN Online: 2160-8806
ISSN Print: 2160-8792

Uterine Arteriovenous Malformations: Therapeutic Strategies and the Place of Hysteroscopy

S. Haddout[1], A. Agman[2], P.-F. Ceccaldi[3]

Clinical Study

Management of Acquired Uterine Arteriovenous Malformations Associated with Retained Products of Conception

Clinical Investigation / Araştırma

DOI: 10.4274/tjod.galenos.2022.34683
Turk J Obstet Gynecol 2022;19:111-7

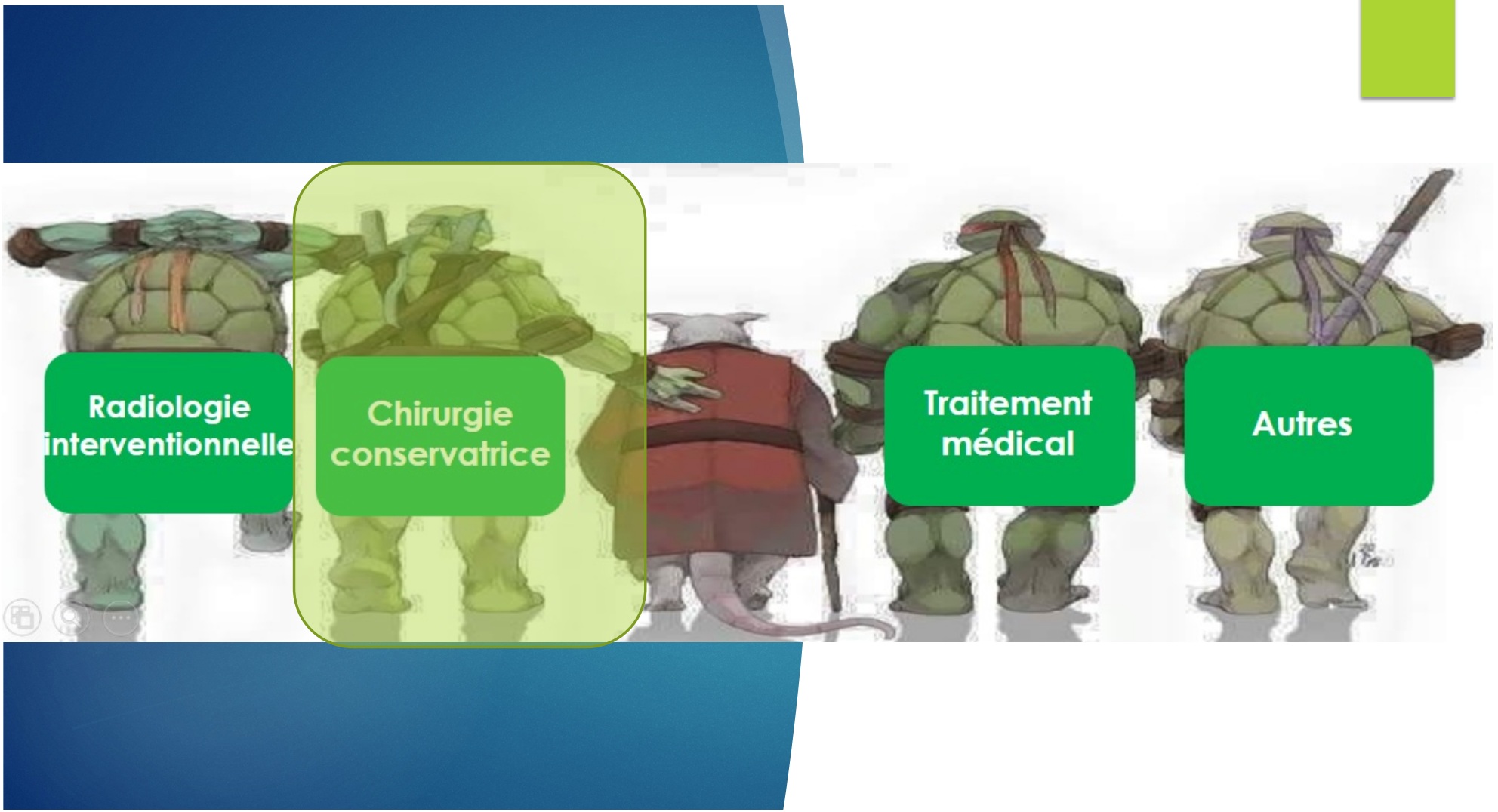
Outcome in women undergoing uterine artery embolization for arterio-venous malformation diagnosed post-pregnancy-A retrospective study

Gebelik sonrası tanı konulan arteriyovenöz malformasyon nedeniyle uterin arter embolizasyonu uygulanan kadınlarda sonlanım-Retrospektif bir çalışma

Vidushi Kulshrestha[1], Swati Shivhare[1], Jyoti Meena[1], Shivanand Gamanagatti[2], Seema Singhal[1], Neeta Singh[1], Sunesh Kumar[1], Vatsla Dadhwal[1]

[1]Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, New Delhi, India
[2]Department of Radiodiagnosis, All India Institute of Medical Sciences, New Delhi, India

- **Taux d'échec** : **6,7 %** (1/15), nécessitant une 2e embolisation
- **Causes principales d'échec**
  - **Artères collatérales non traitées ou non accessibles** → embolisation incomplète
  - **Choix du matériel ou technique inadéquats** : certaines particules (ex. PVA) peuvent entraîner des re canalisations ou une occlusion insuffisante
  - **Retard dans la prise en charge** : succès primaire plus élevé qu'en cas de secondaire, soulignant l'importance de l'intervention rapide
  - **Profil anatomique complexe** (plusieurs feeders) rendant l'accès et l'occlusion difficiles


Radiologie interventionnelle
Chirurgie conservatrice
Traitement médical
Autres

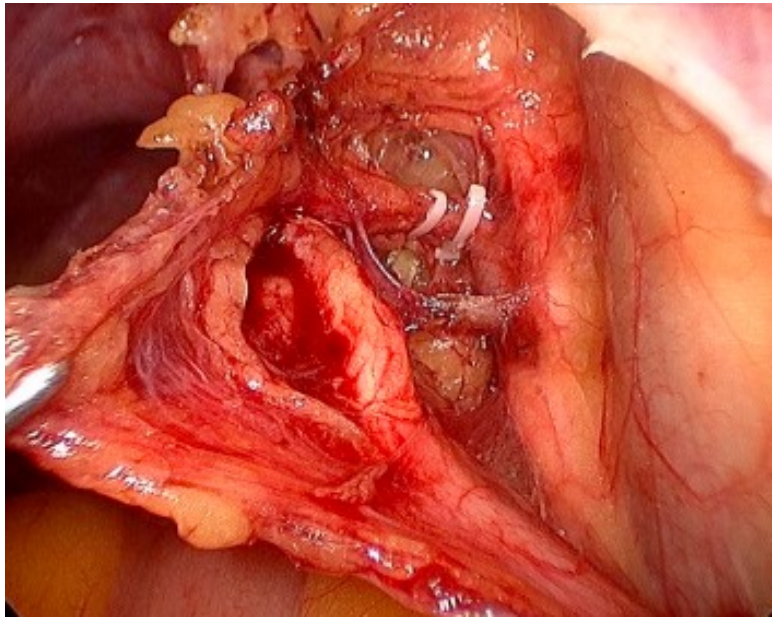
JMIG The Journal of Minimally Invasive Gynecology

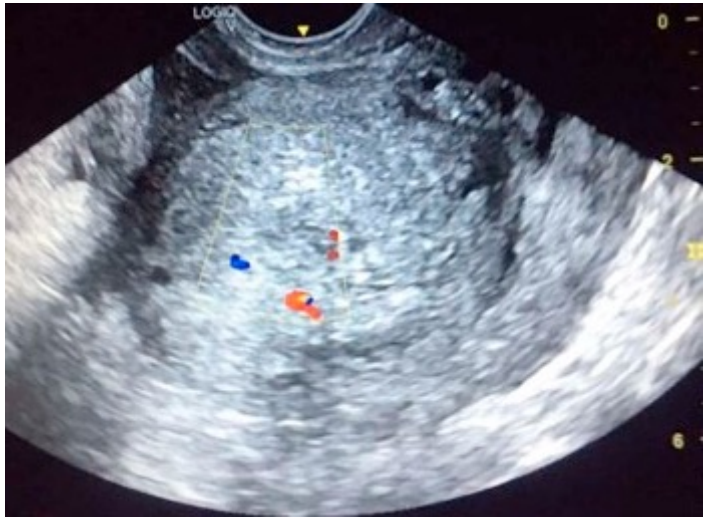
IMAGES IN GYNECOLOGICAL SURGERY | VOLUME 25, ISSUE 7, P1124-1125, NOVEMBER 01, 2018

Laparoscopic Uterine Artery Ligation for Uterine Arteriovenous Malformation

Ramesh Bettaiah, DGO, MD, FCPS, DFP, FICOG • Shwetha S. Kamath, MS

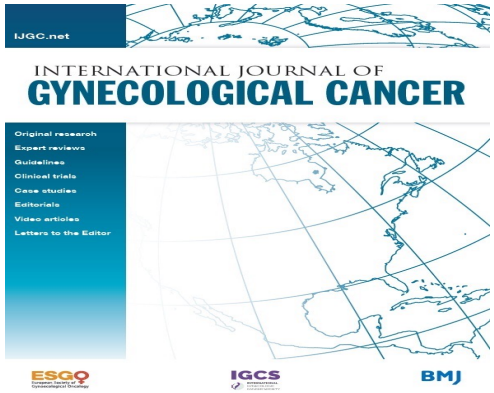
Published: December 28, 2017 • DOI: https://doi.org/10.1016/j.jmig.2017.12.018 • Check for updates





Uterine arteriovenous malformation: fertility-sparing surgery using unilateral ligation of uterine artery and ovarian ligament

D. MILINGOS*, D. DOUMPLIS*, K. SIEUNARINE†, P. SAVAGE‡,
A.D. LAWSON§ & J.R. SMITH*



- 32 ans, choriocarcinome
- Saignement récurrent après rémission
- MAV utérine acquise, latéralisée à droite
- Echec de 2 tentatives d'embolisation radiologique
- Ligature unilatérale de l'artère utérine droite et du ligament utéro-ovarien droit avec mesure de la saturation en O2 et de l'index de perfusion au niveau de la corne droite

SURGEON'S CORNER

Int J Gynecol Cancer 2007, **17**, 735–737

Résection coelioscopique

JMIG The Journal of Minimally Invasive Gynecology

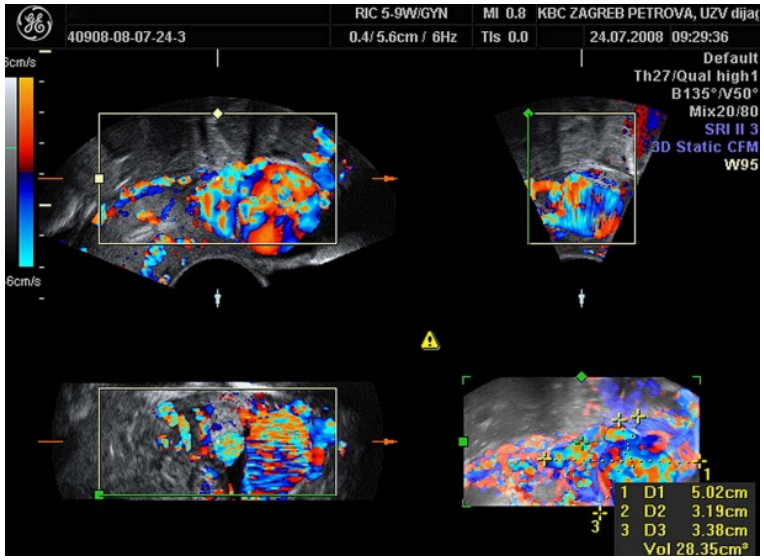
doi:10.1016/j.jmig.2009.01.012

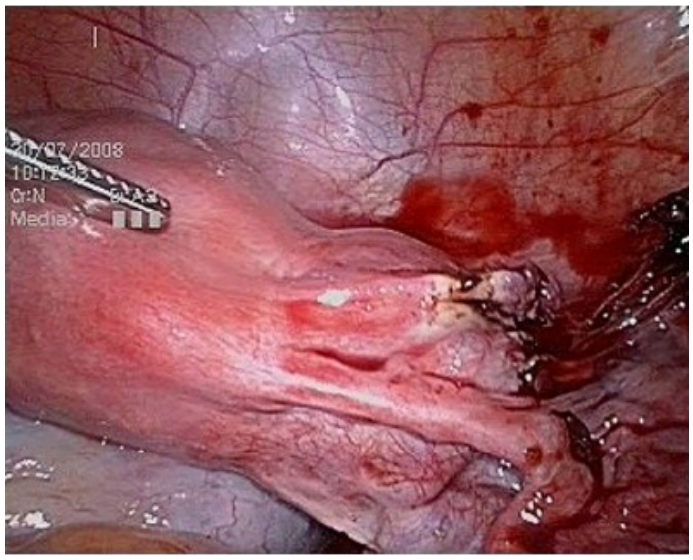
Case Report

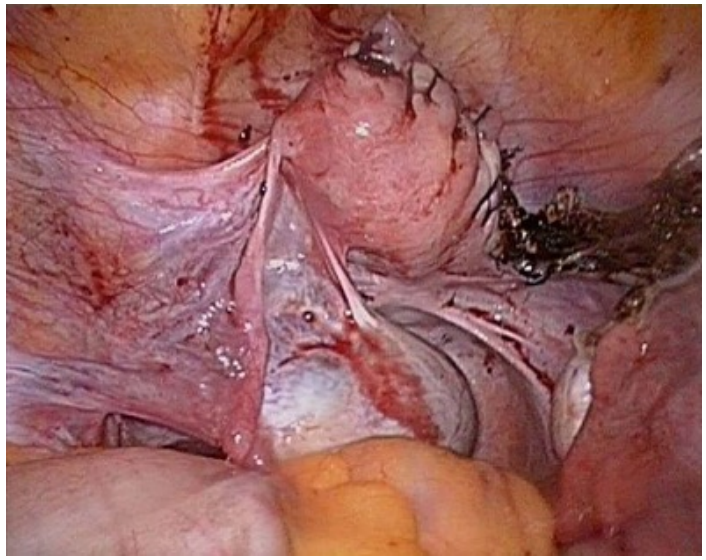
Successful Laparoscopic Bipolar Coagulation of a Large Arteriovenous Malformation Due to Invasive Trophoblastic Disease: a Case Report

Ante Corusic, MD, Dubravko Barisic, MD, Helena Lovric, MD*, Albert Despot, MD, and Pavao Planinic, MD

From the Department of Obstetrics and Gynecology, School of Medicine, University of Zagreb, Zagreb, Croatia (all authors).

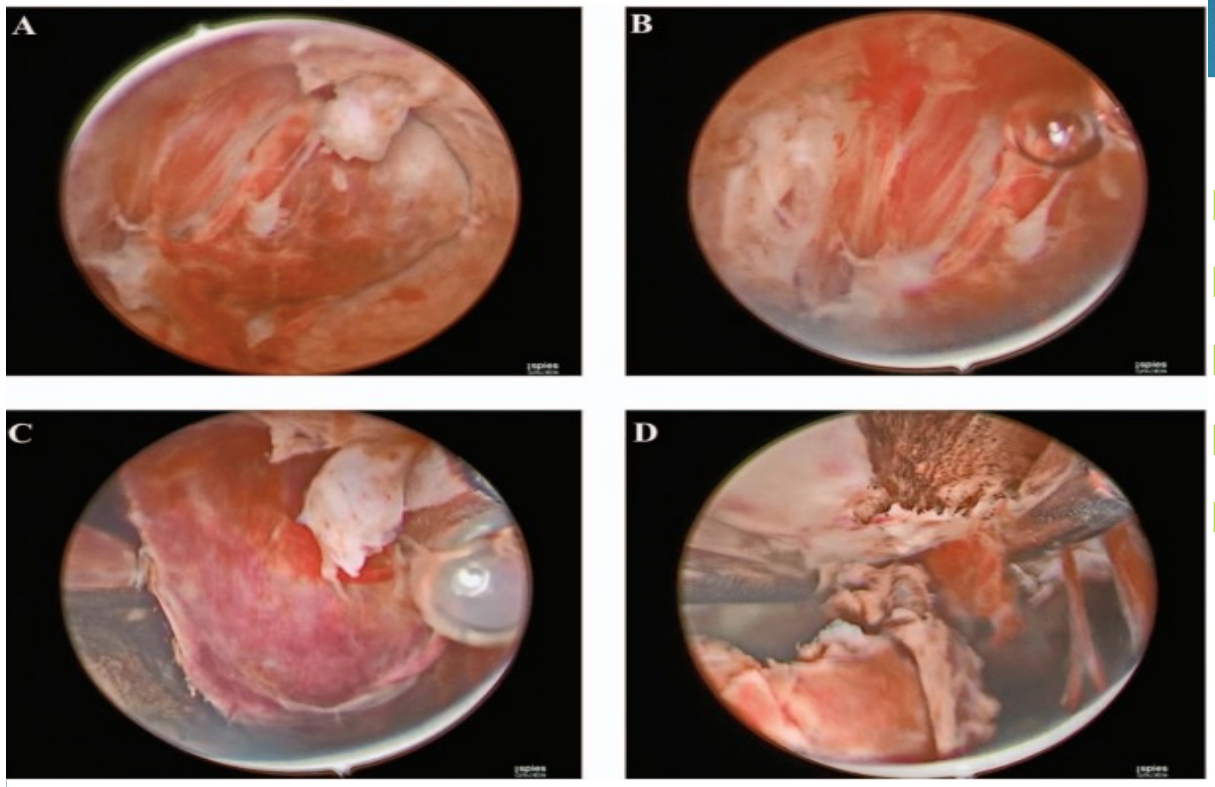






Hysteroscopic Management of Uterine Arteriovenous Malformation

Stefano Calzolari, MD, Mauro Cozzolino, MD, Eleonora Castellacci, MD, Valeria Dubini, MD, Alfonso Farruggia, MD, Giovanni Sisti, MD



- 11 patientes, âge moyen 30 ans
- Taille moyenne de la lésion: 20 mm
- Distension par sérum physiologique
- Résection à l'anse bipolaire
- Succès 100%

Figure 2. A, **B**, Visualization of AVM in the uterine cavity. **C**, **D**, Hysteroscopic resection of the lesion.

JSLS Journal of The Society of Laparoscopic & Robotic Surgeons
Multispecialty MIS, Open Access, Downloaded by Millions
April–June 2017 Volume 21 Issue 2 e2016.00109
DOI: 10.4293/JSLS.2016.00109

JSLS Journal of The Society of Laparoscopic & Robotic Surgeons
Multispecialty MIS, Open Access, Downloaded by Millions

Hysteroscopic Management of Uterine Arteriovenous Malformation

Stefano Calzolari, MD, Mauro Cozzolino, MD, Eleonora Castellacci, MD, Valeria Dubini, MD, Alfonso Farruggia, MD, Giovanni Sisti, MD

Table 2.
AVMs Characteristics, Procedure Time, Follow-Up Data

Patient	Size of the Lesion (mm)	Position of the Lesion in the Uterus	PSV (m/sec)	Duration of the Procedure (minutes)	Follow-up (months)	Pregnancy Outcome	Time from Procedure to Pregnancy (months)
1	40	Anterior	1.05	40	24		
2	20	Right Side	0.95	45	6	Miscarriage	4
3	20	Anterior	0.89	30	24	Term vaginal delivery	8
4	20	Anterior	0.91	30	22		
5	15	Right Side	0.50	40	20		
6	30	Posterior	0.99	15	26	Term vaginal delivery	12
7	15	Right Side	0.90	20	28		
8	35	Right Side	1.15	45	30	Term vaginal delivery	7
9	20	Posterior	0.97	20	29	Term vaginal delivery	9
10	45	Anterior	1.11	35	4		
11	35	Left Side	1.20	30	14	Currently at 20 weeks, uneventful	8
Median (range)	20 (15–45)		0.97 (0.5–1.2)	30 (15–45)	24 (4–30)		8 (4–12)

Abstracts | Free Access

VP06.16: Choosing your weapons for management of enhanced myometrial vascularity: a case series

M. Farhati, H.S. Abouda, H. Frikha, F. Affes, B. Chanoufi

First published: 14 October 2021 | https://doi.org/10.1002/uog.24128

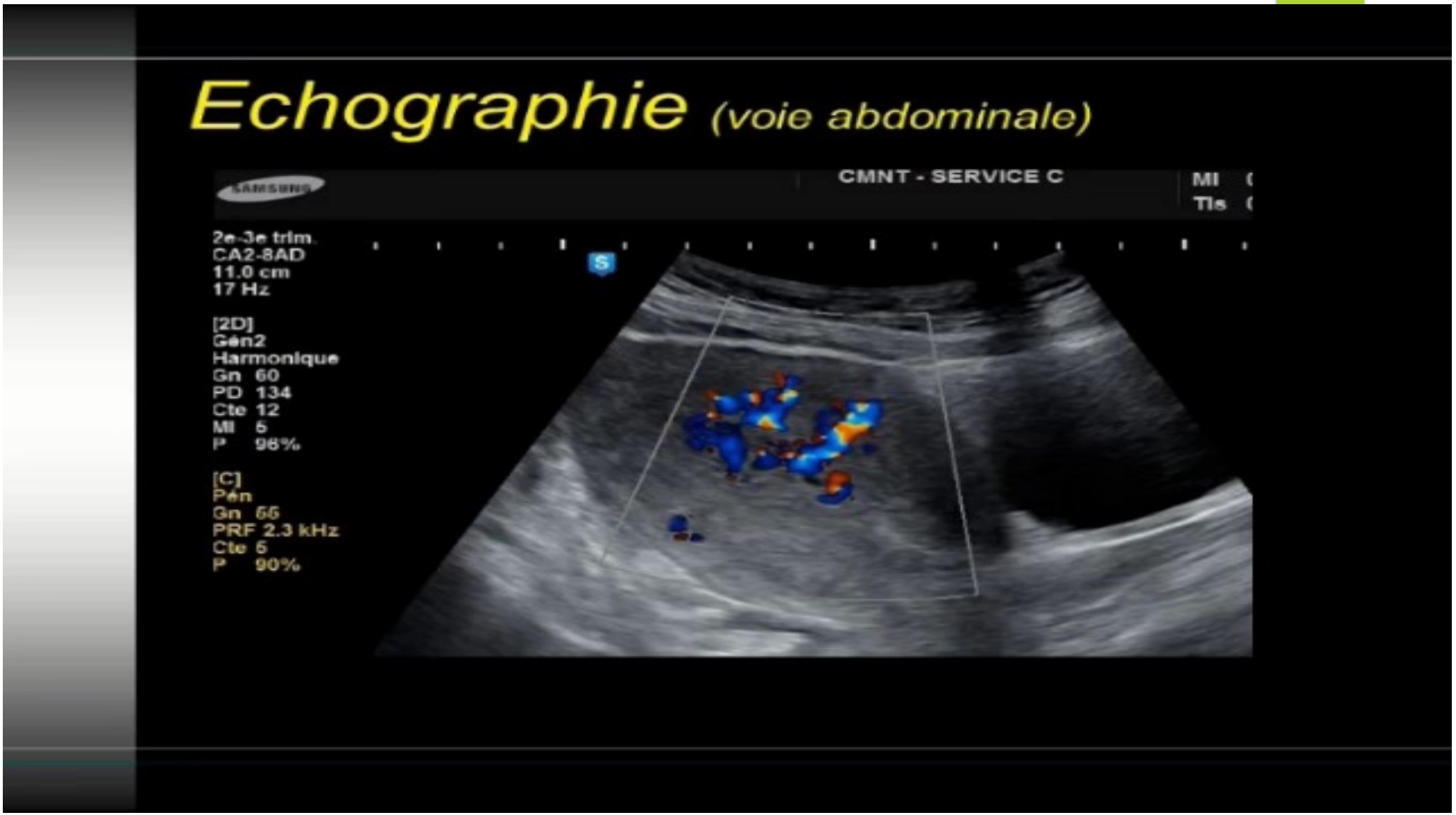
CAS N°1

3rd case: 43-year-old patient, three vaginal deliveries, consulted for persistent vaginal bleeding one month after pregnancy termination by curettage, serum HCG was negative. On ultrasound enhanced myometrial vascularity was suspected with a pulsed Doppler systolic peak at 26 cm/s. MR angiography confirmed the diagnosis. This patient underwent laparoscopic clipping of the uterine arteries, followed by hysteroscopy with bleeding points coagulation by monopolar loop. Ultrasound performed the next day showed total disappearance of the vascularisation.

ULTRASOUND in Obstetrics & Gynecology

isuog.org

Echographie *(voie abdominale)*



CAS N°2: RPOC

32 ans

G3P2 2AVB

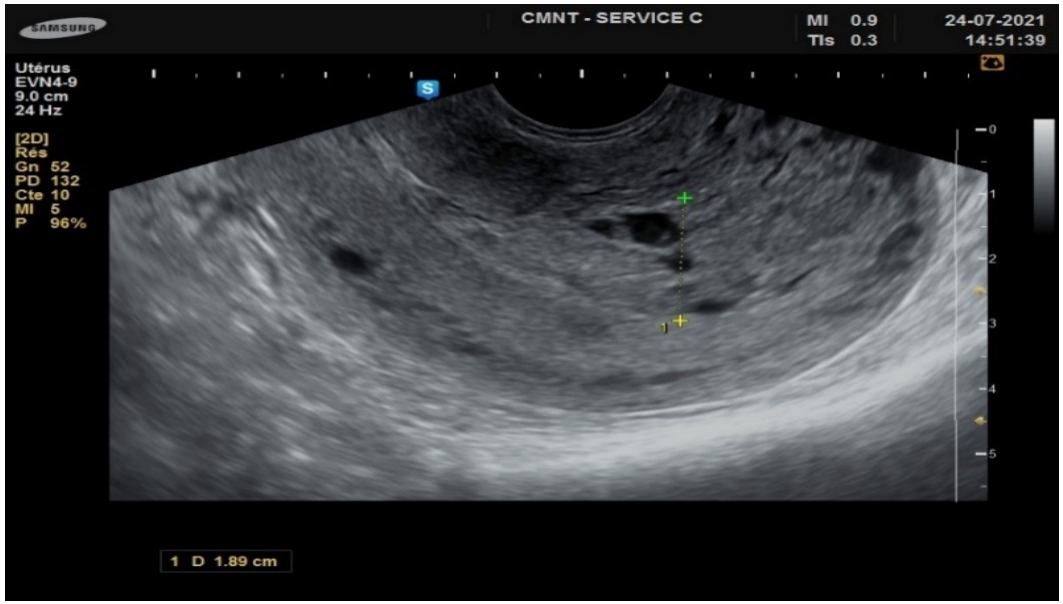
Avortement spontané

Métrorragies

Hb correcte

Bhcg négative

Rétention hypervascularisée Gutenberg 3



Facts Views Vis Obgyn, 2019, 11 (3): 217-222

Original paper

Hysteroscopic management of retained products of conception: A single center observational study

L. Alonso Pacheco[1], D. Timmons[2], M. Saad Naguib[2], J. Carugno[2]

[1]*Gynecology Endoscopy Unit. Centro Gutenberg. Malaga, Spain;* [2]*Department of Obstetrics, Gynecology and Reproductive Sciences. University of Miami. Miller School of Medicine. Miami FL. USA.*

Table I. – Gutenberg Classification: Ultrasonographic patterns of RPOC (Tinelli and Haimovich, 2017).

Type 0: Hyperechogenic avascular mass
Type 1: Different echoes with minimal or no vascularity
Type 2: Highly vascularized mass confined to the cavity
Type 3: Highly vascularized mass with highly vascularized myometrium

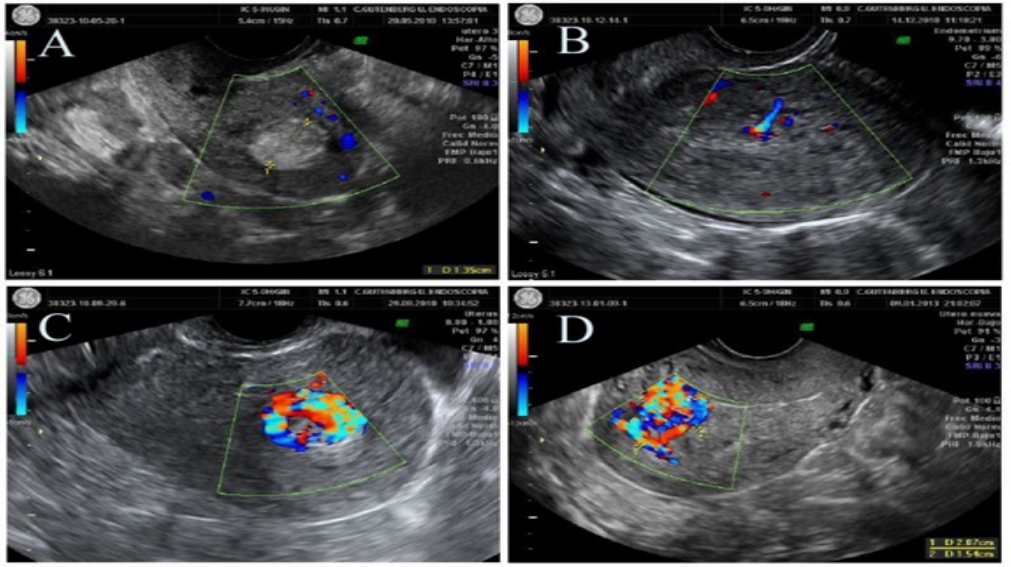
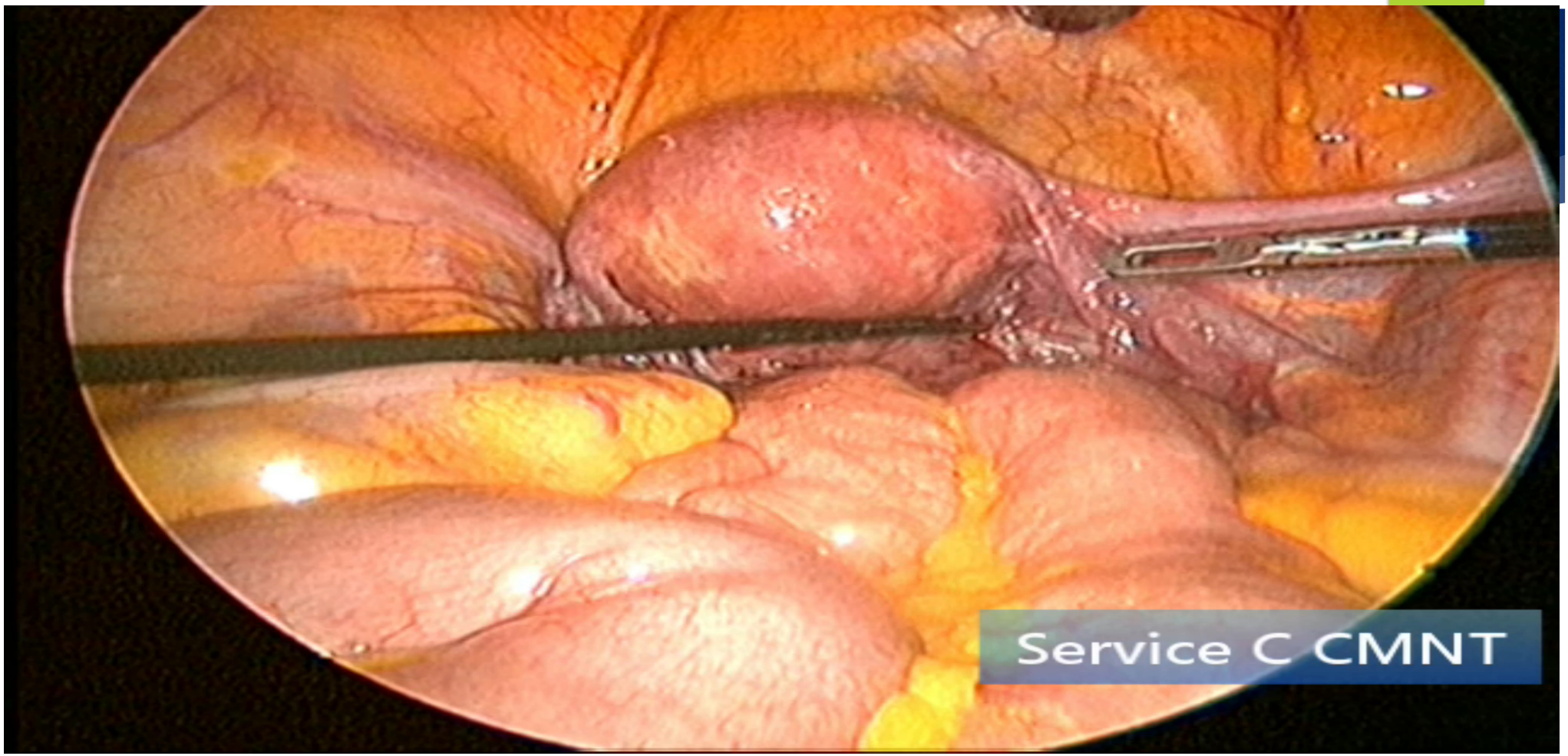


Figure 1: Ultrasonographic patterns of RPOC. Gutenberg Classification. A- Type 0: hyperechogenic avascular mass. B-Type 1: Different echoes with minimal or no vascularization. C- Type 2: Highly vascularized mass confined to the cavity. D- Type 3: Highly vascularized mass with highly vascularized endometrium.


Service C CMNT

MAV ACQUISE

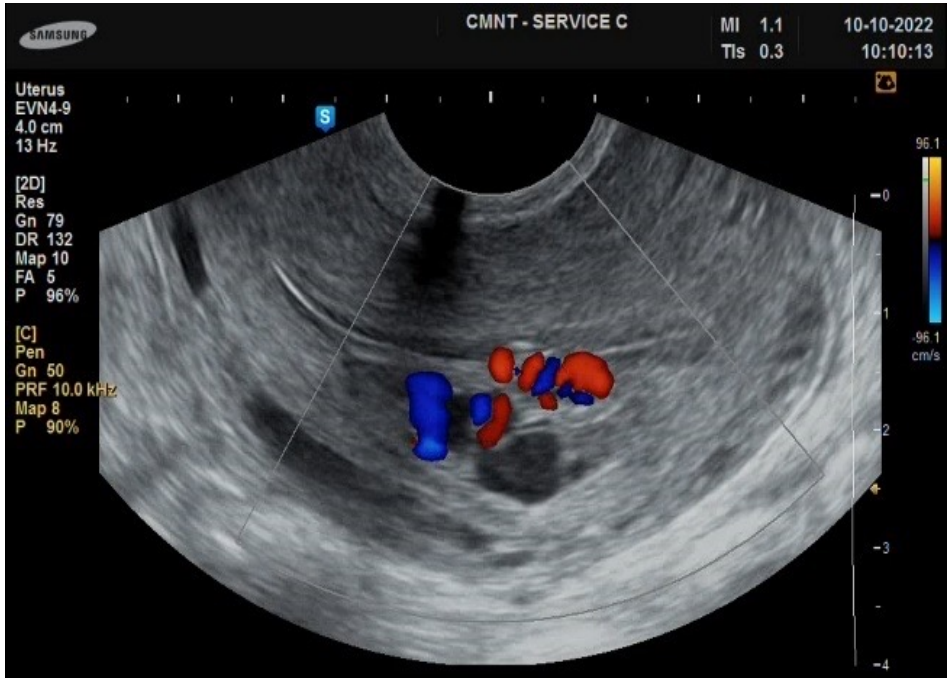
27 ans

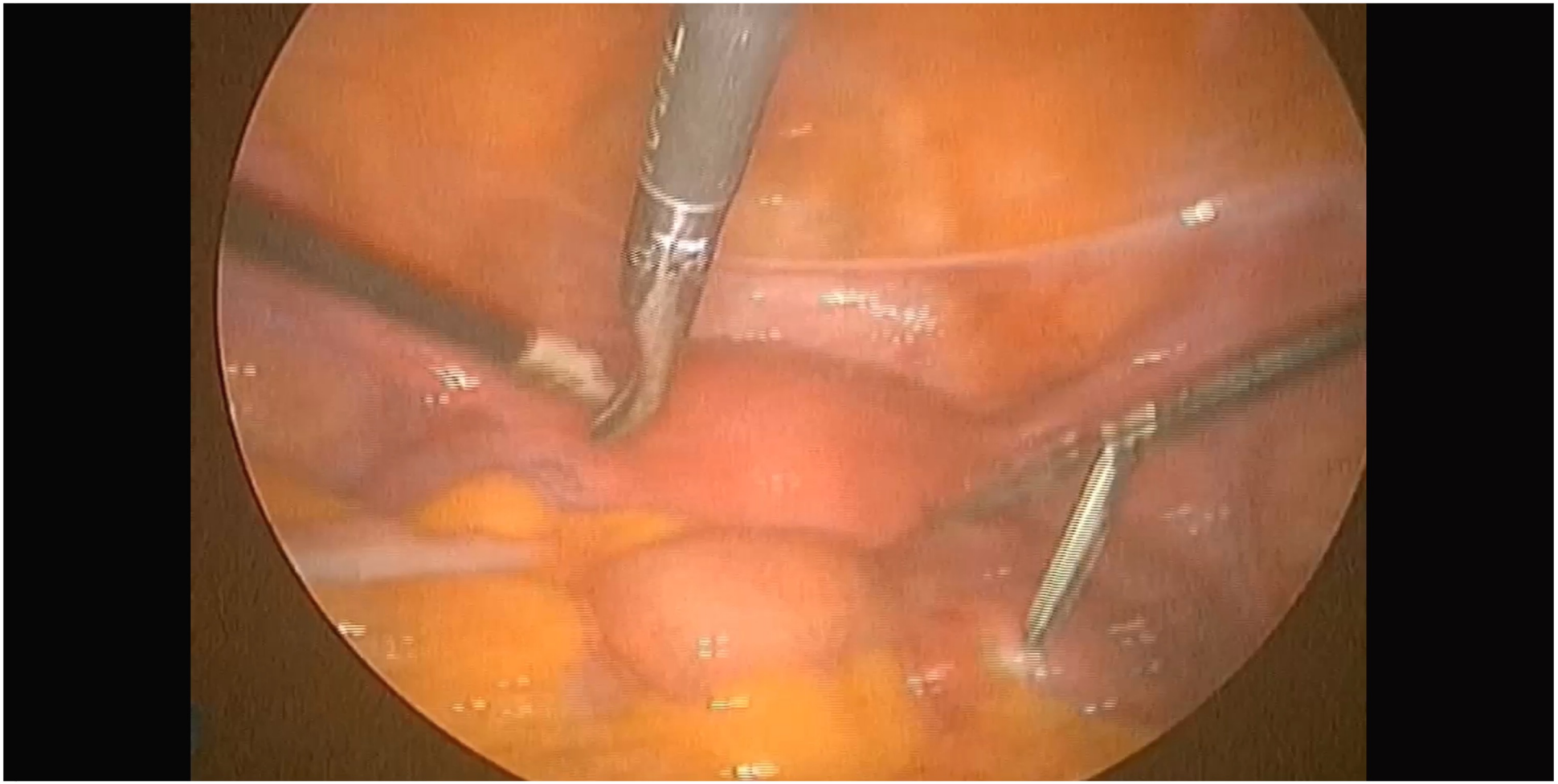
G2P2 1 AVB A C/S

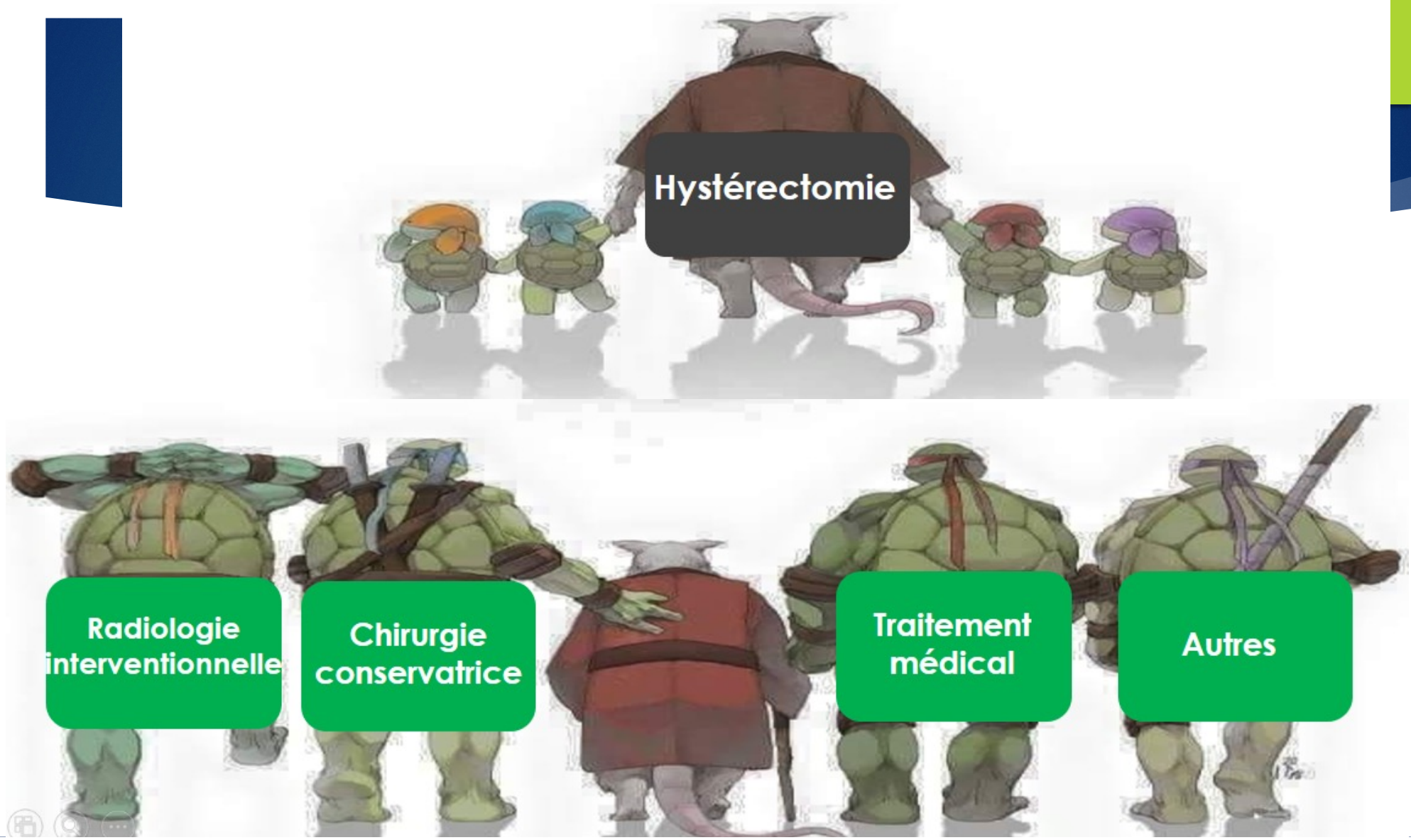
Métrorragies post partum persistante

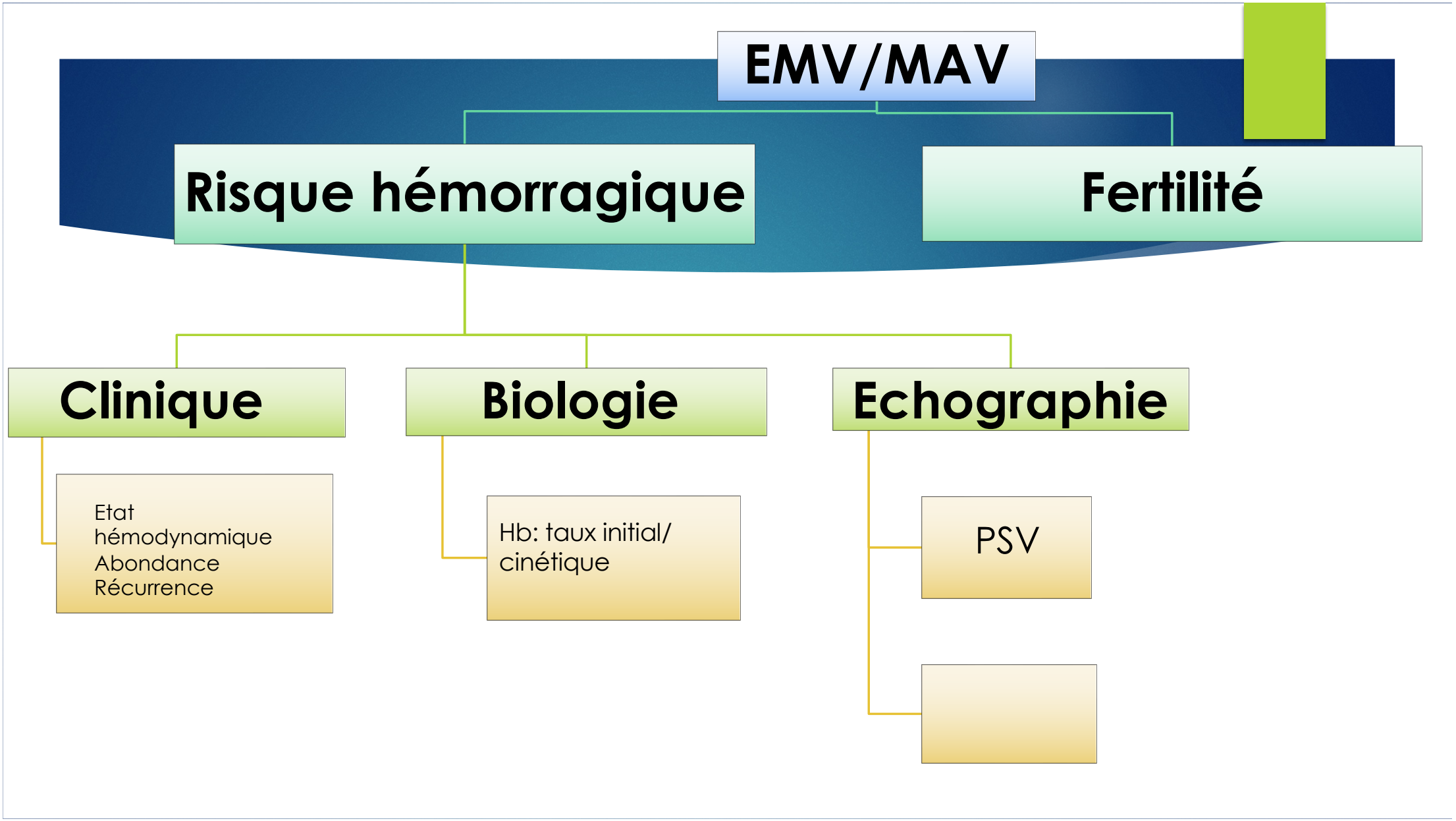
Cavité vide

Image hypervascularisée intramyométriale






Hystérectomie
Radiologie interventionnelle
Chirurgie conservatrice
Traitement médical
Autres

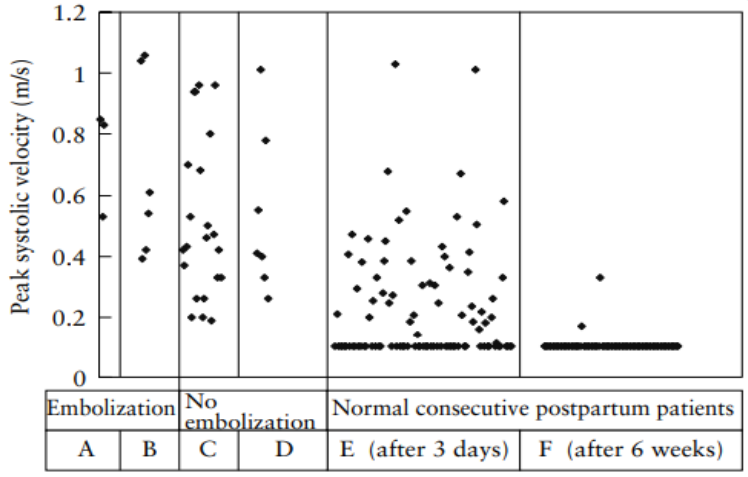

EMV/MAV
Risque hémorragique
Fertilité
Clinique
Biologie
Echographie
Etat hémodynamique
Abondance
Récurrence
Hb: taux initial/ cinétique
PSV

Ultrasound Obstet Gynecol 2003; **21**: 570–577
Published online in Wiley InterScience (www.interscience.wiley.com). **DOI:** 10.1002/uog.159

Color Doppler imaging is a valuable tool for the diagnosis and management of uterine vascular malformations

D. TIMMERMAN*, J. WAUTERS*, S. VAN CALENBERGH*, D. VAN SCHOUBROECK*, G. MALEUX†, T. VAN DEN BOSCH‡ and B. SPITZ*

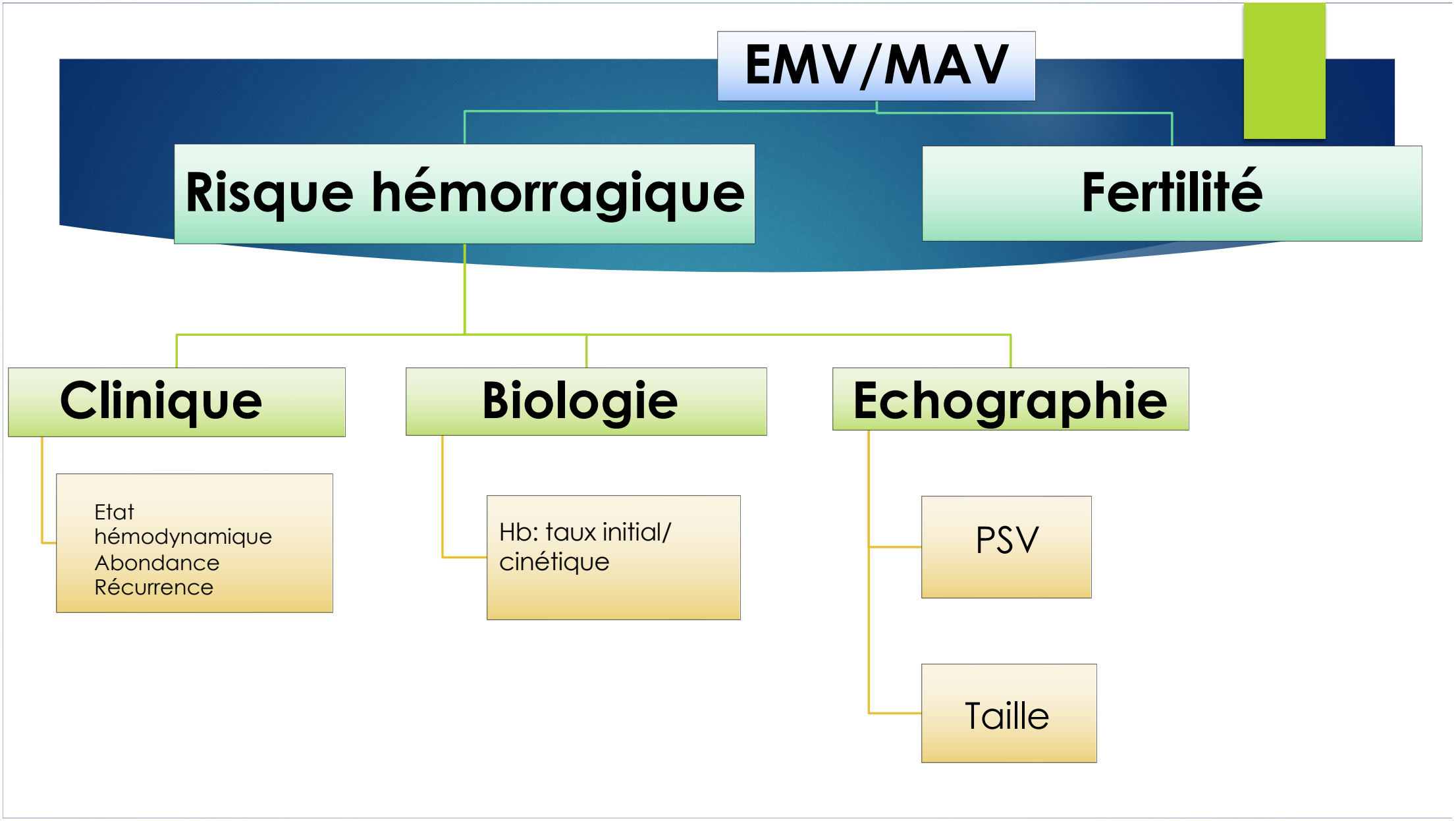
*Departments of *Obstetrics and Gynecology and †Radiology, University Hospital Gasthuisberg, Katholieke Universiteit Leuven, Leuven, Belgium and ‡Department of Obstetrics and Gynecology, AZ Heilig Hart, Tienen, Belgium*



Group	*Observations* (n)	*Mean*	*SD*	*Minimum*	*Maximu*
A	3	0.737	0.18	0.53	0.85
B	6	0.677	0.30	0.39	1.06
C	22	0.516	0.26	0.19	0.96
D	7	0.534	0.27	0.26	1.01
E	98	0.225	0.19	0.10	1.03
F	75	0.104	0.03	0.10	0.33

SD, standard deviation.

malformations confirmed at angiography. PSV values of ≥ 0.83 *m/s were associated with higher probabilities of further treatment, such as an embolization, whereas no vascular malformation with a PSV value* < 0.39 *m/s required embolization.*


EMV/MAV
Risque hémorragique
Fertilité
Clinique
Biologie
Echographie
Etat hémodynamique
Abondance
Récurrence
Hb: taux initial/ cinétique
PSV
Taille

Pregnancy after uterine arterio-venous malformation – case series and literature review

Rebeka Eling[1]
BSc

Alison Kent[1,2]
BMBS, FRACP, MD

Meiri Robertson[1,3]
MB, ChB, BSc MedSc Hon

AJUM August 2012 15 (3)

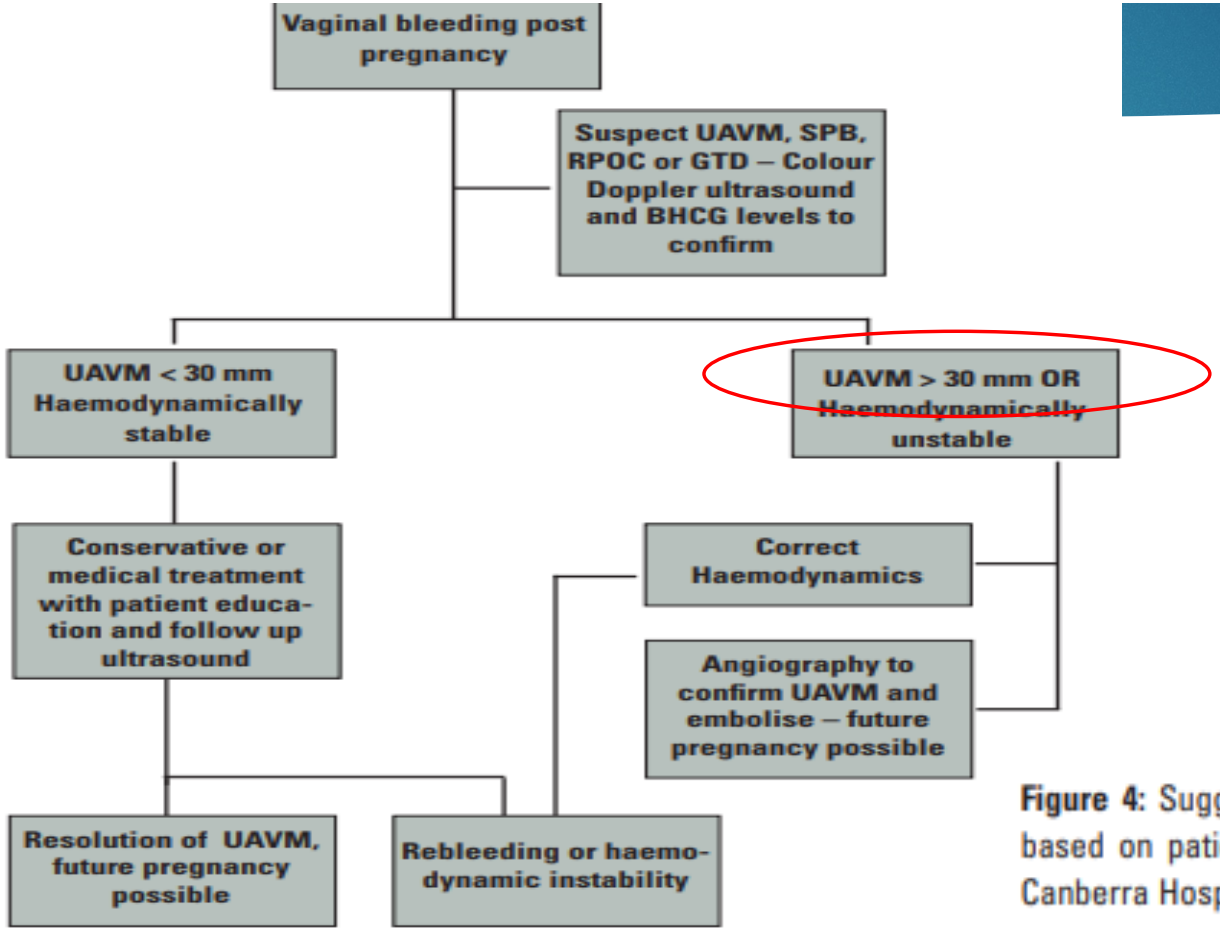
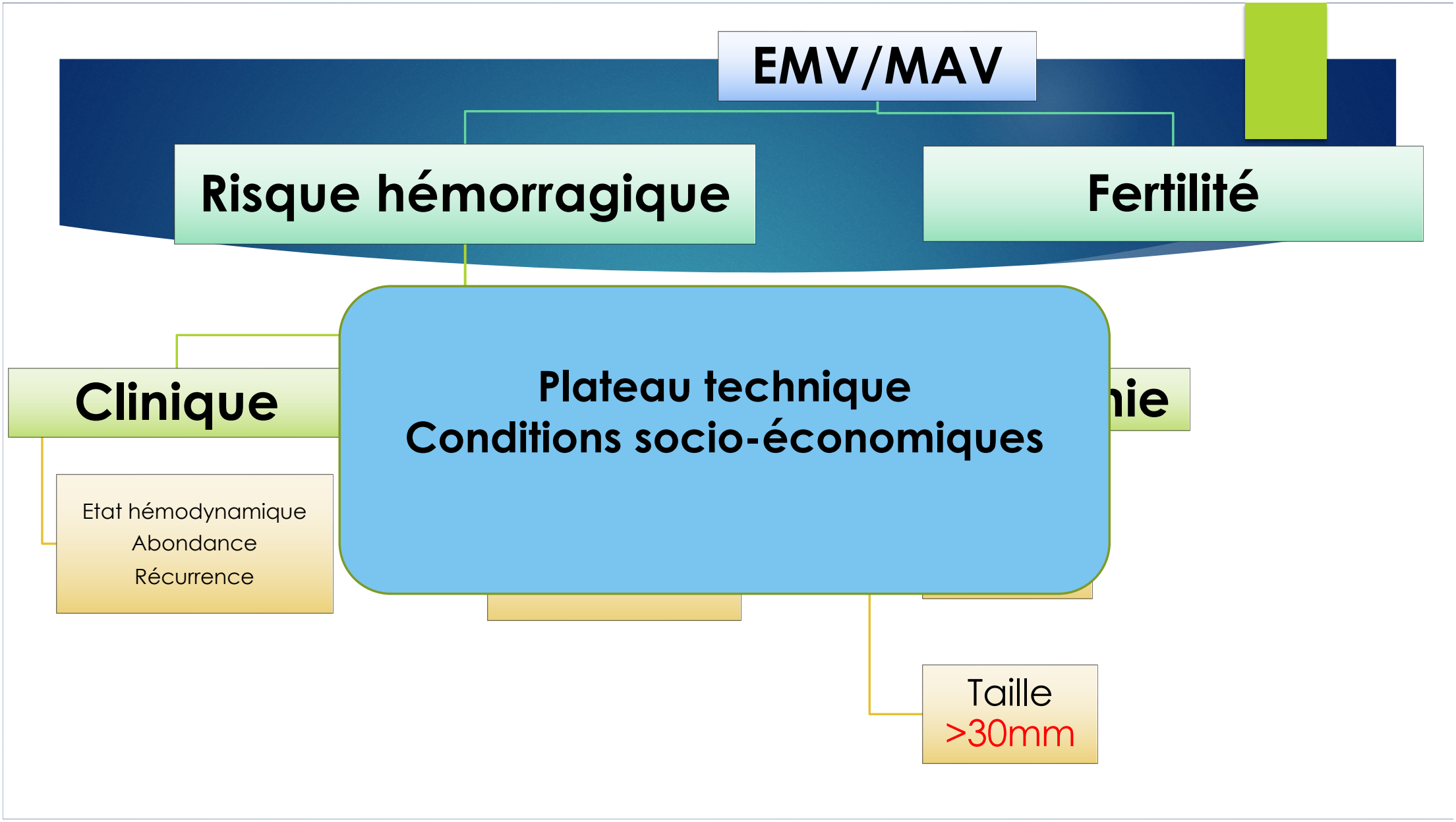
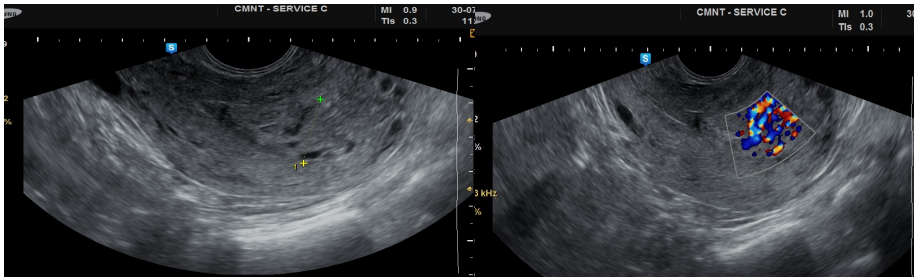


Figure 4: Suggested diagnostic and treatment flowchart based on patients seen at the Fetal Medicine Unit, The Canberra Hospital, Canberra.


EMV/MAV
Risque hémorragique
Fertilité
Clinique
Plateau technique
Conditions socio-économiques
Etat hémodynamique
Abondance
Récurrence
Taille
>30mm

Take home messages

- Toujours penser à la MAV



- Adresser à un centre de référence

ARTERY AND VEIN

MERCI

35ÈME CONGRÈS NATIONAL DE LA STGO & 25ÈME CONGRÈS DE LA FEMGO

27, 28 & 29 NOVEMBRE 2025

Thèmes

1- Endométriose
2- Thérapies fœtales
3- Rencontre des sociétés pour un meilleur transfert des connaissances (STGO,FIGO, ESHRE,AFOG,SAGO,FEFOG)
4- Problématique des césariennes
5- Mastopathies bénignes
6- Violences obstétricales
7- Les plaintes en gynécologie obstétrique

Masterclass

1- Sexologie: STSC-STGO
2- Laparoscopie ISGE-STGO
3- Écho 1er trimestre ISUOG
4- PMA

PALAIS DES CONGRÈS - TUNIS

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