



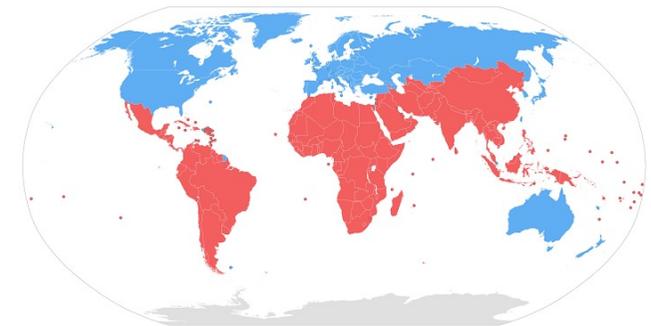
Pr. Hassine Saber Abouda

Labidi Imene

Service C, centre de maternité et de néonatalogie de Tunis

L'hémorragie du post partum

- ◉  mortalité maternelle dans le monde (OMS 2014)



◉ **38%**

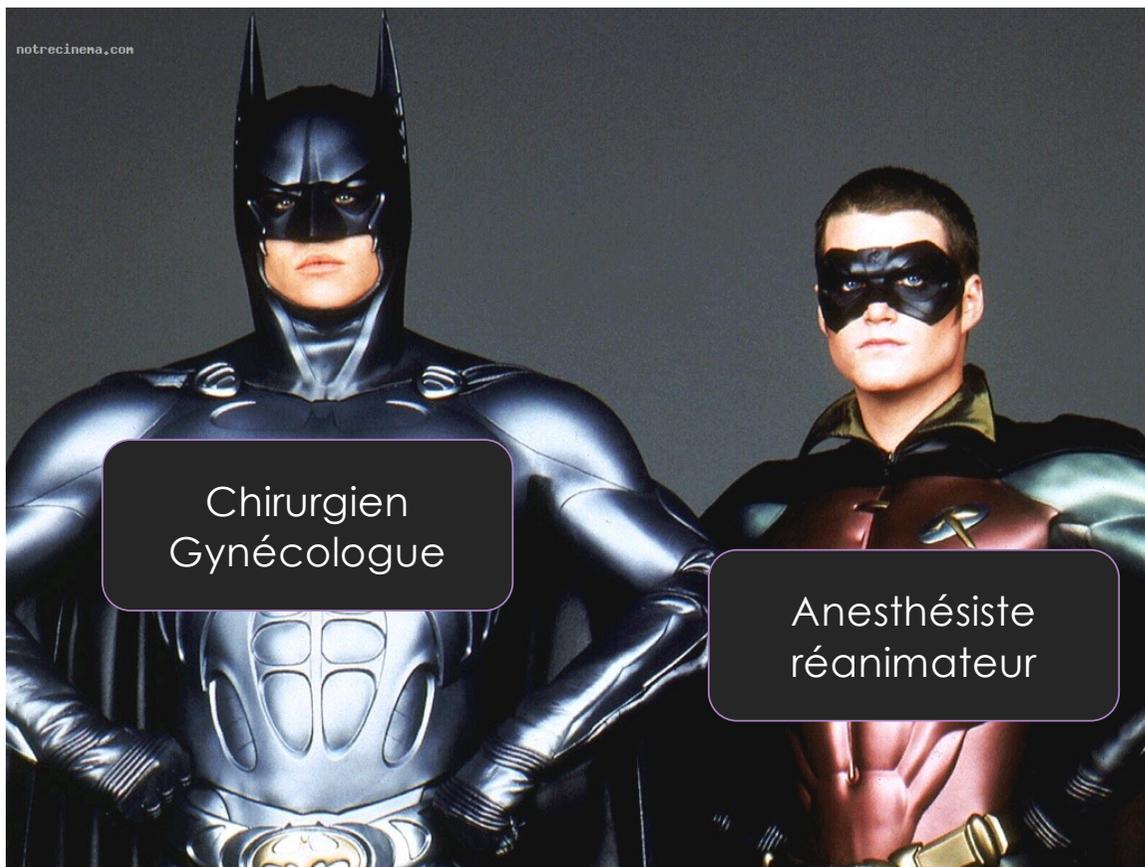
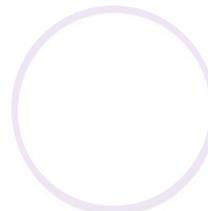
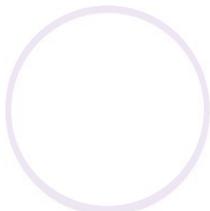


(MSP 2018)

11%



(INSERM 2017)



Chirurgien
Gynécologue

Anesthésiste
réanimateur

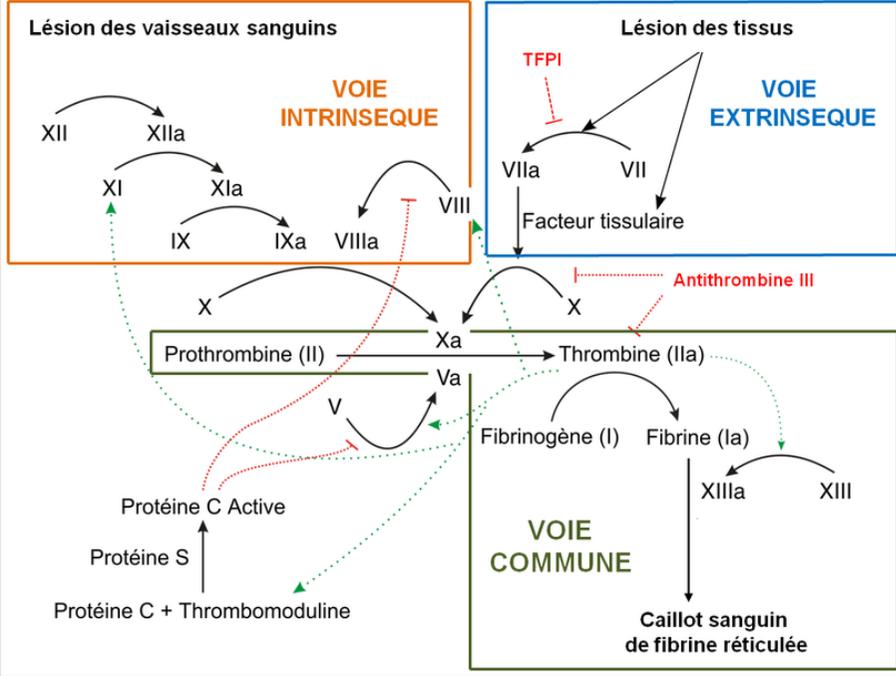
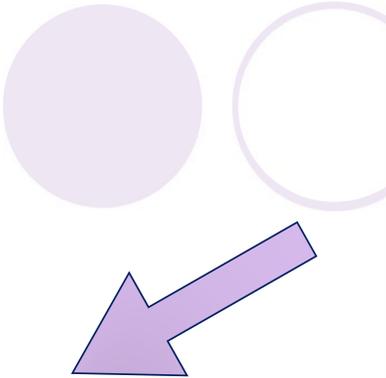




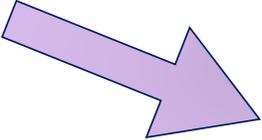
Perte sanguine

=

Consommation



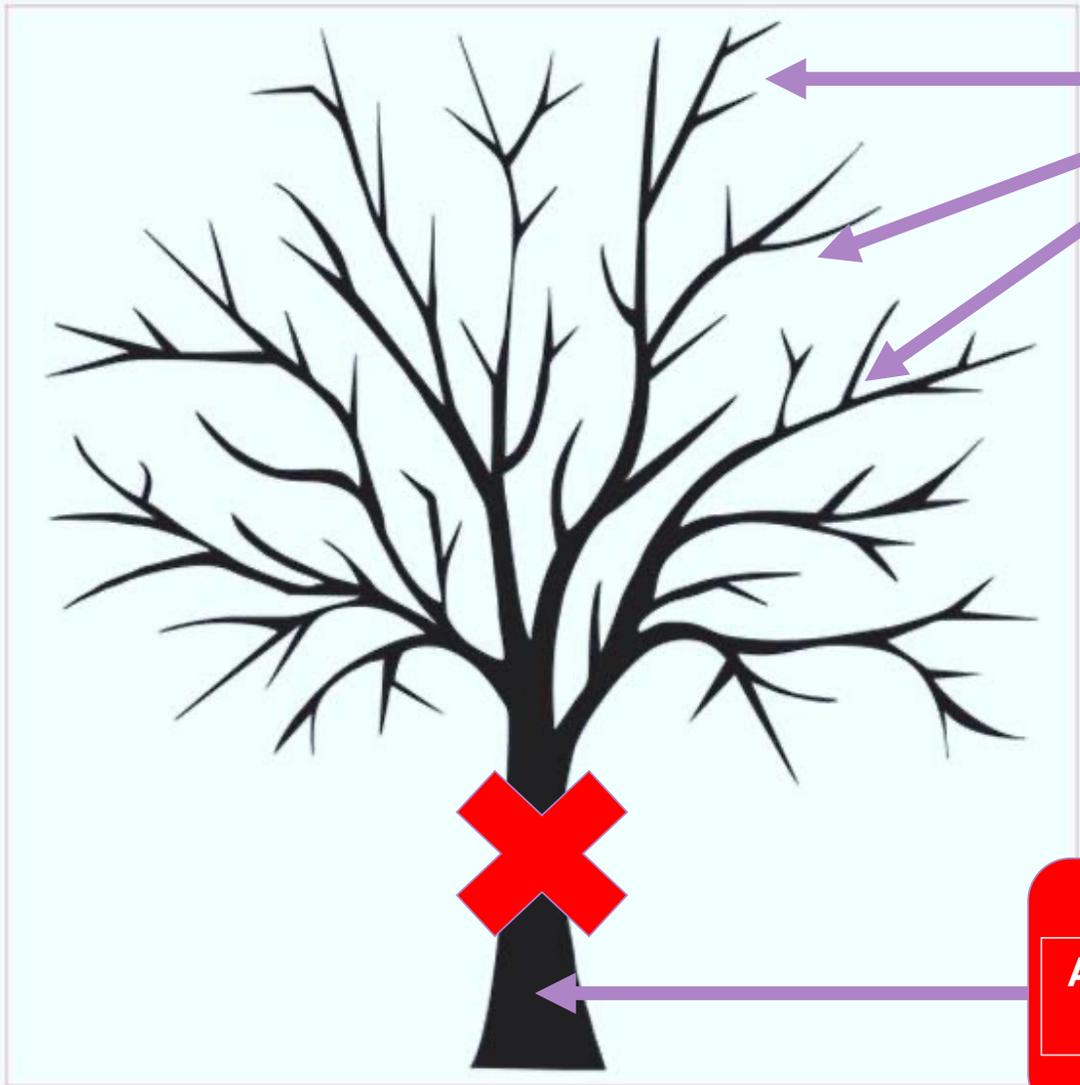
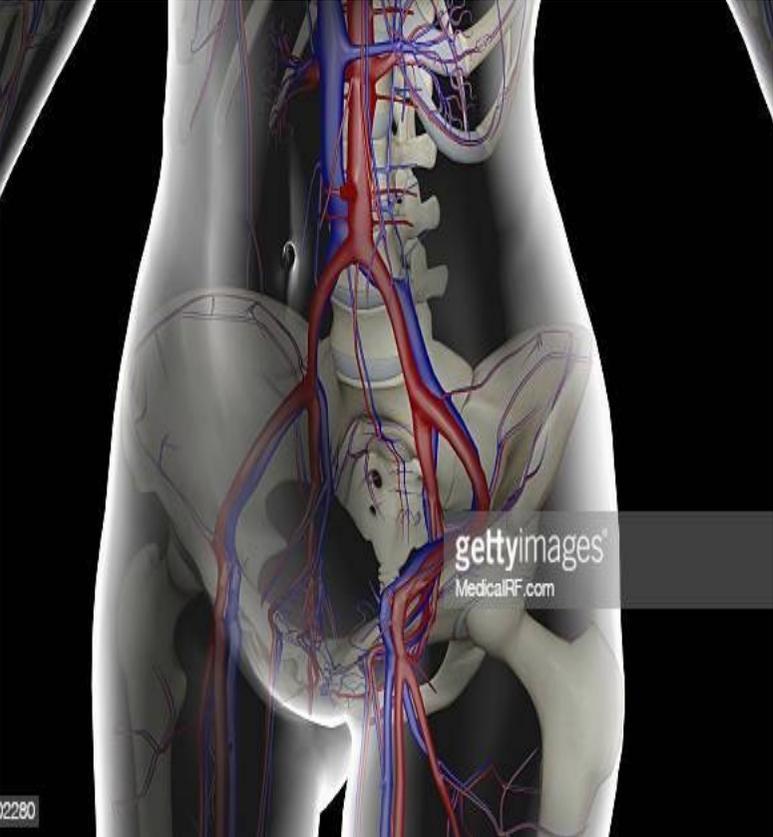
Consommation



CIVD



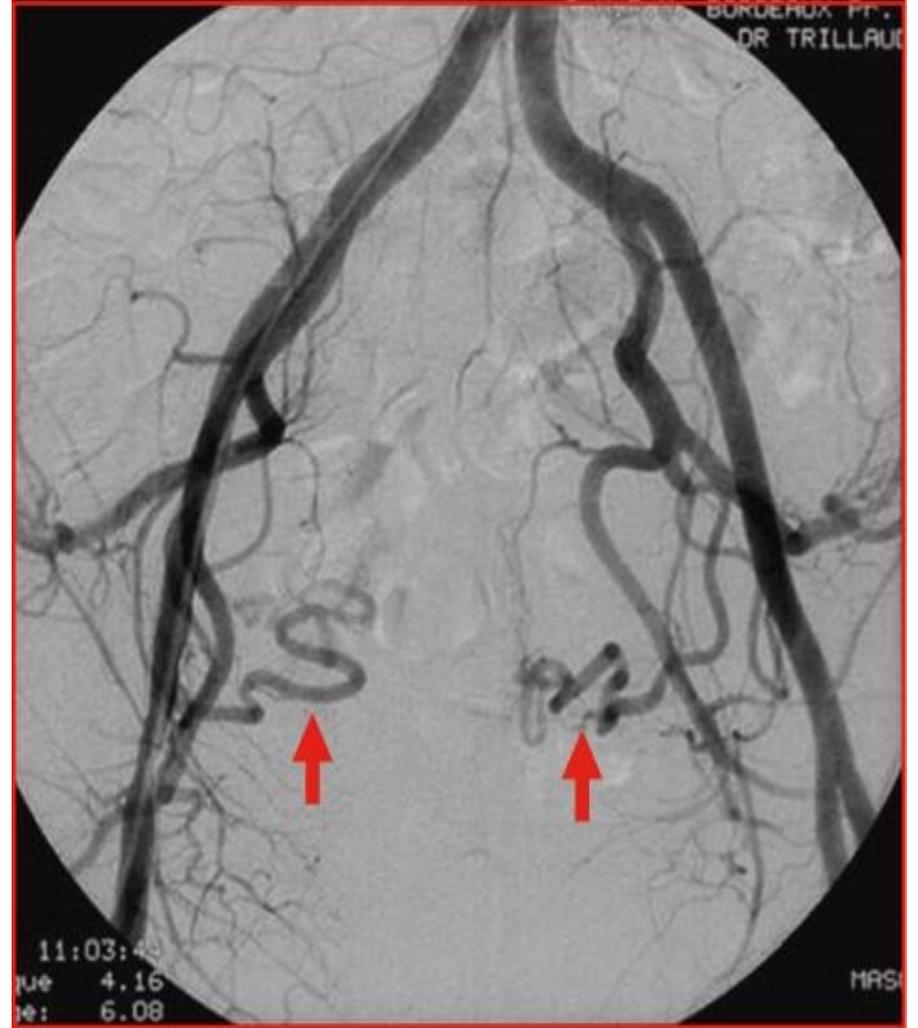
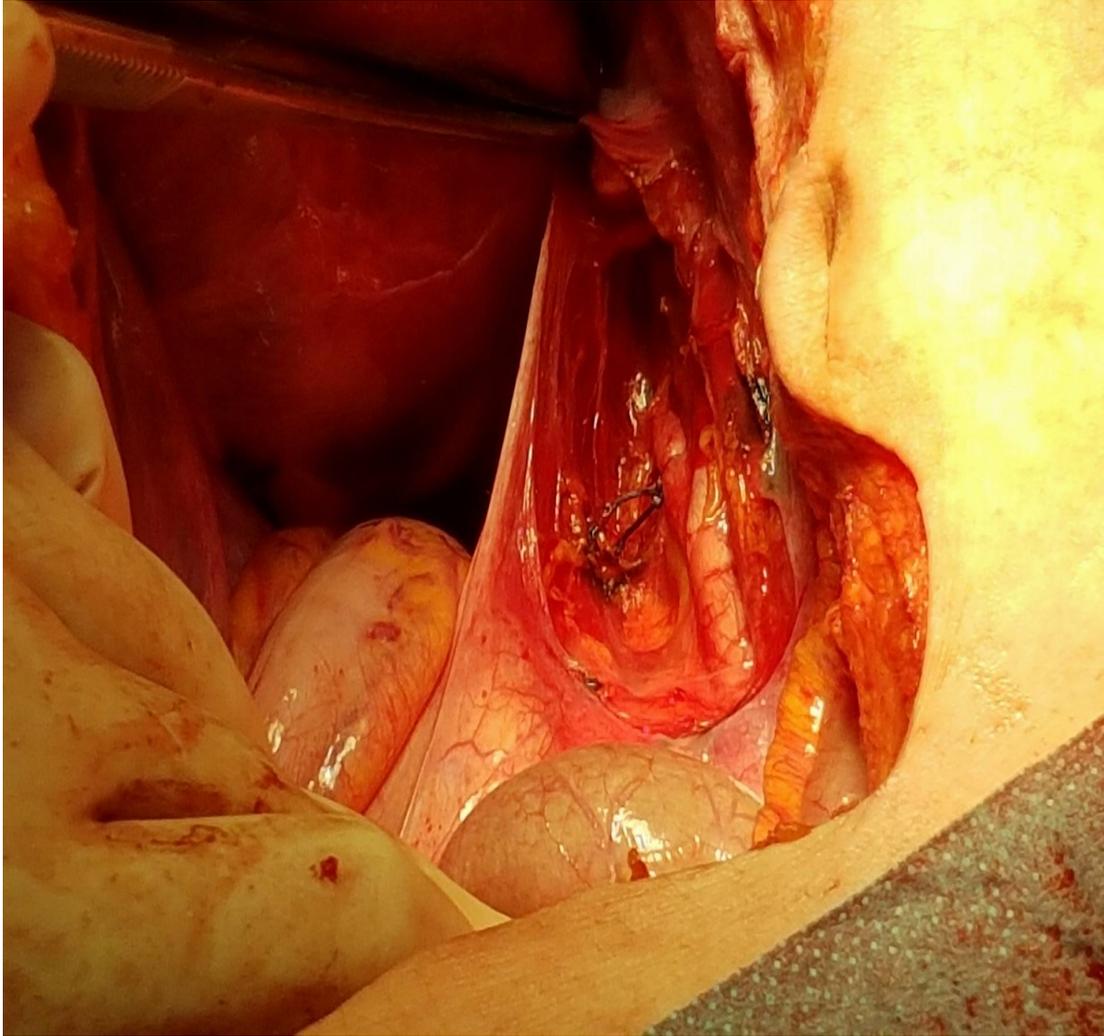
Perte sanguine

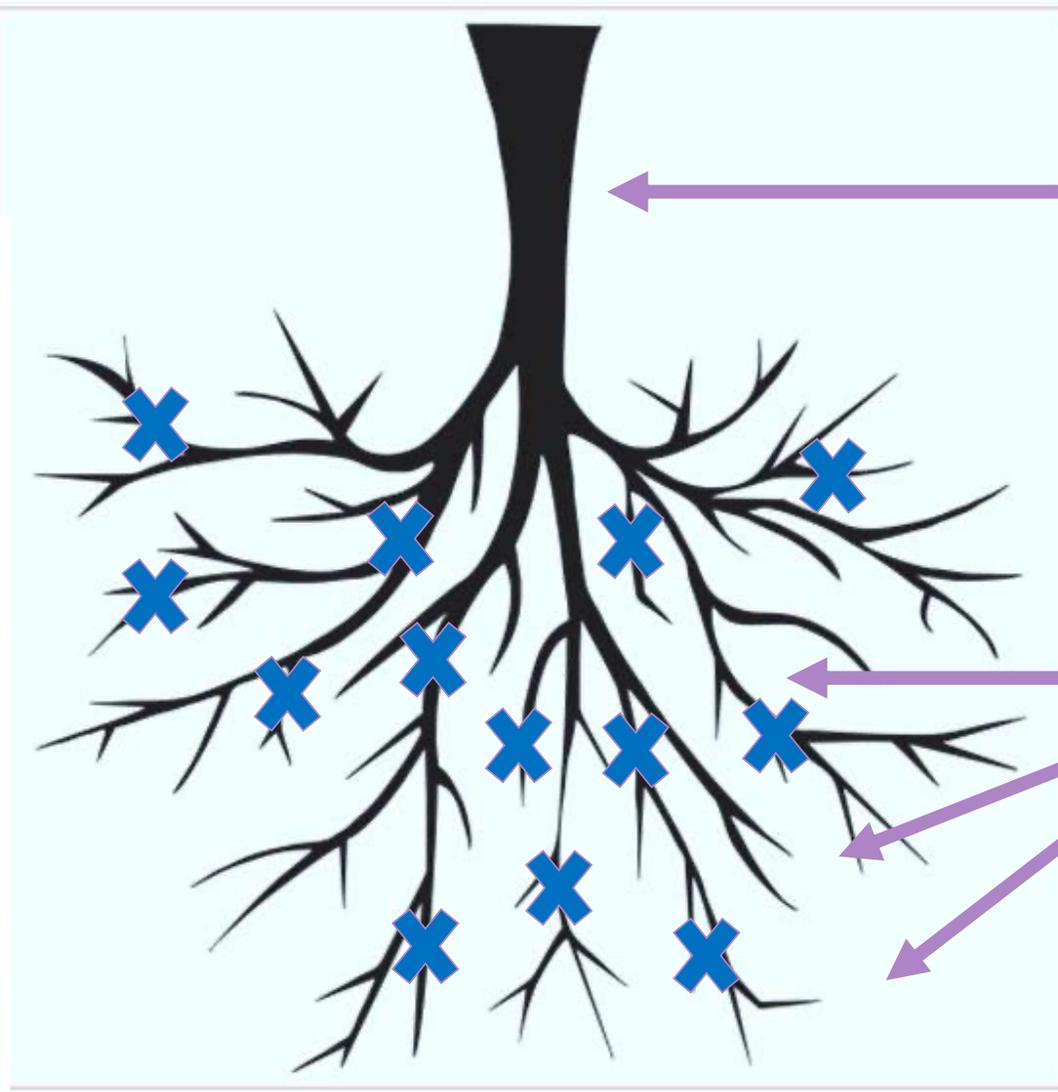
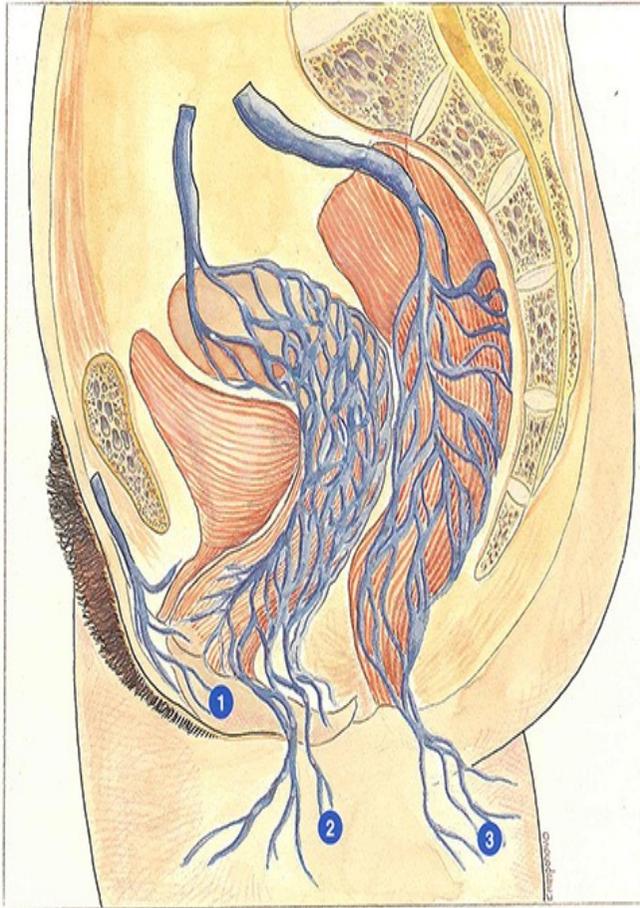


Artérioles



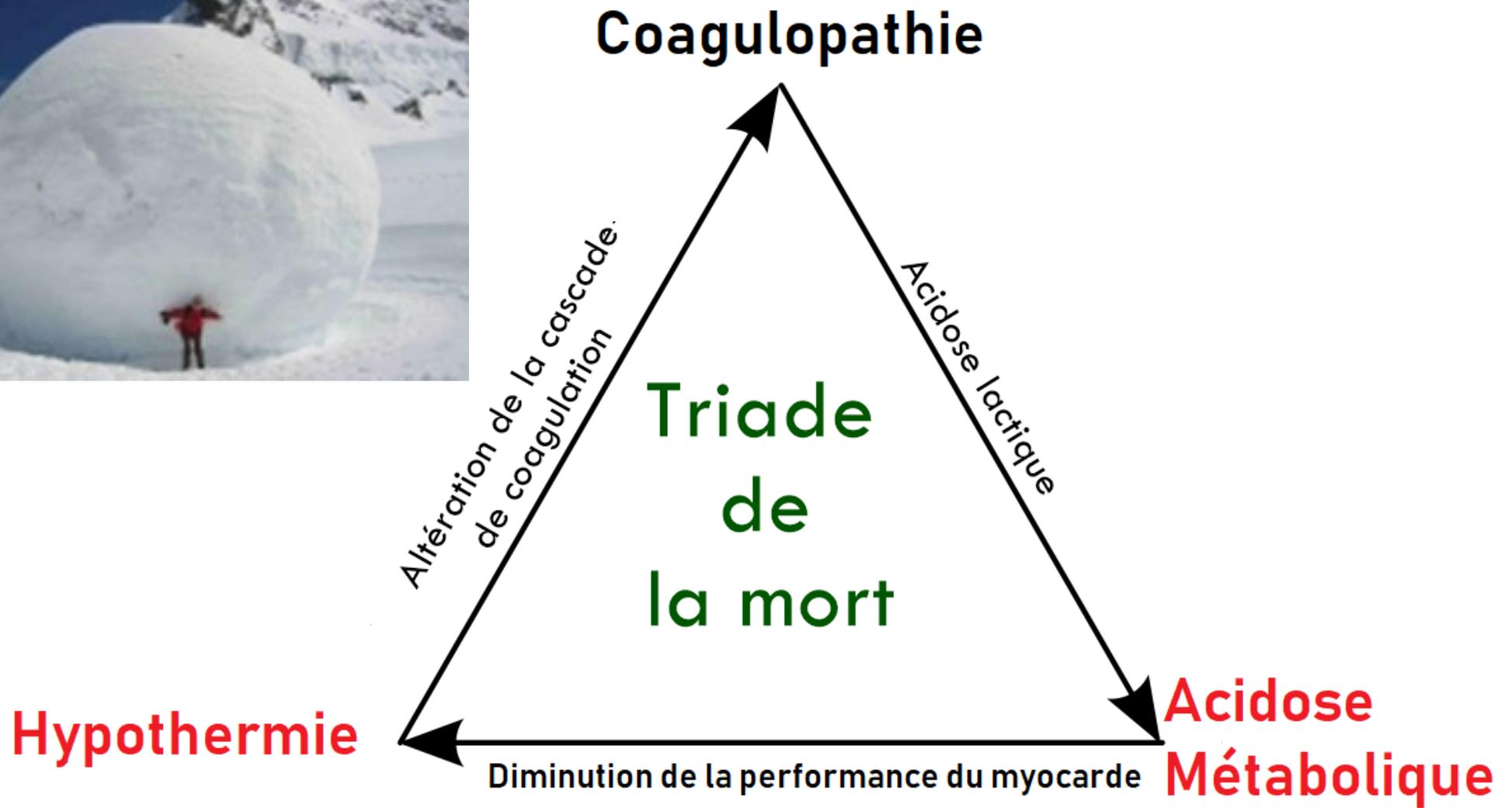
Artère iliaque interne





Veine iliaque interne

Plexus Sacral
Plexus rétropubien
Veines pelviennes latérales



Le mieux est l'ennemi du bien... La solution?



- Compression des vaisseaux contre la paroi pelvienne postérieure
 - Hémostase mécanique
 - Ralentir/arrêter le saignement
 - Corriger les troubles d'hémostase


C'EST PAS SORCIER

« Damage Control »

Définition de l'U.S. Navy :

« Capacité d'un bateau à absorber le dommage et à poursuivre sa mission »



Le concept du « DAMAGE CONTROL »



1-Réparation temporaire pour maintenir le navire à flot.



2-Retour au port



3-Réparation définitive

Le concept du « DAMAGE CONTROL SURGERY »

Damage control resuscitation

Chirurgie de contrôle lésionnel écourtée (hémostase, coprostase, aérostatic)



Réanimation

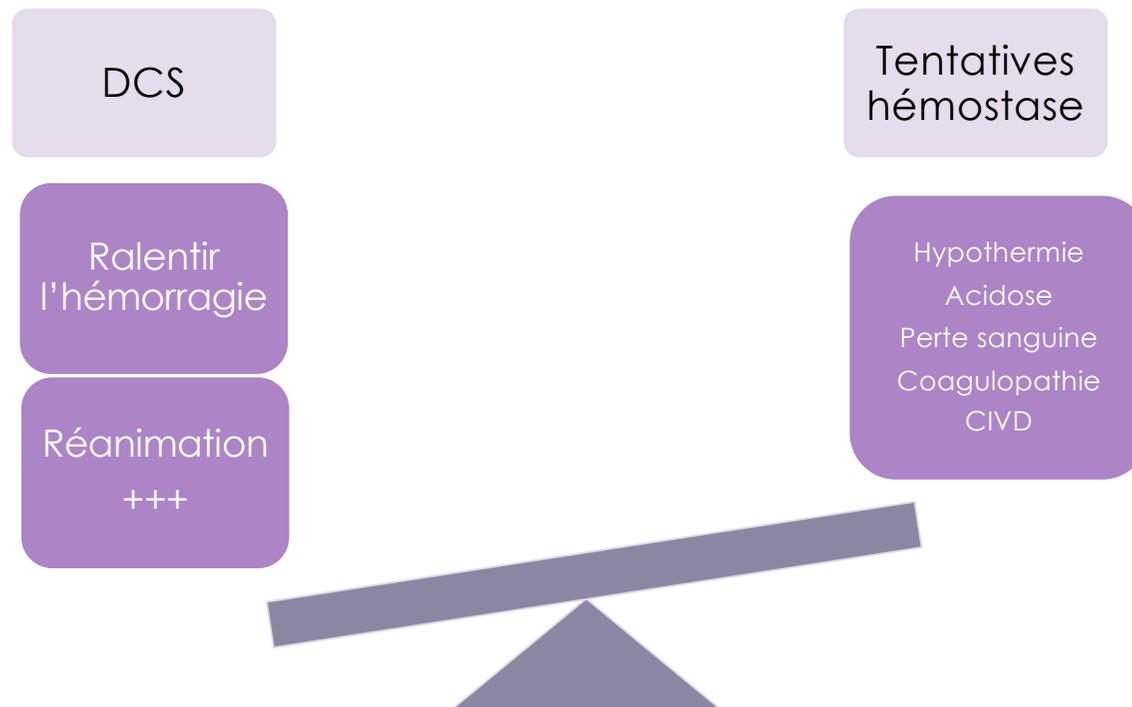
Réparation physiologique



Chirurgie définitive

Packing abdomino-pelvien

Principe de Damage Control Surgery (DCS)



Histoire du packing

- 1926: Konstantinos Logothetopoulos décrit pour la première fois la technique du packing abdomino pelvien en post hystérectomie

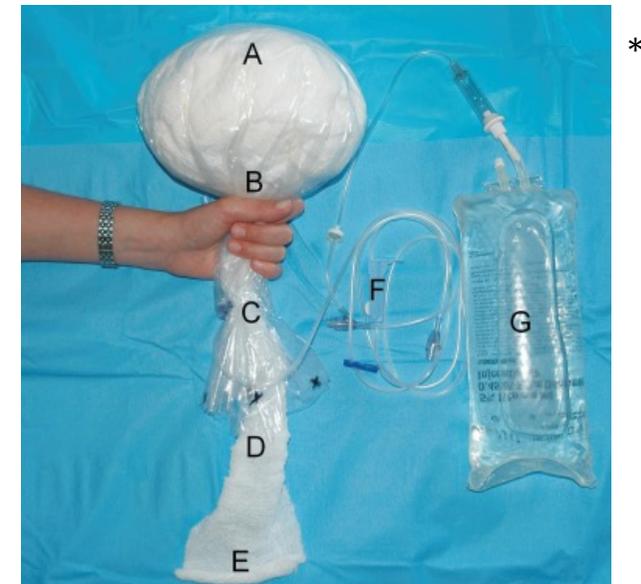
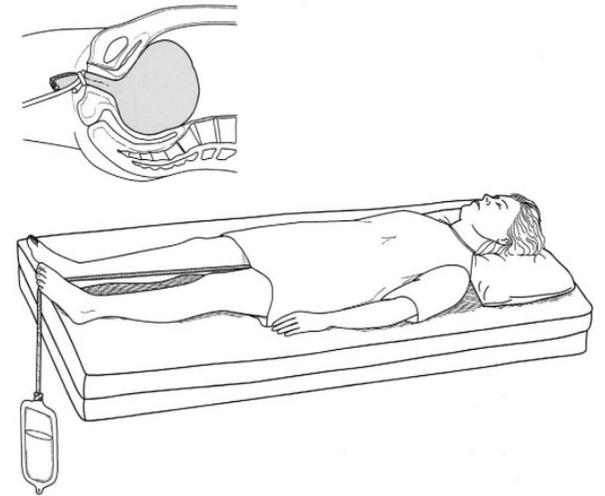


Techniques du packing

The umbrella pack (1926):

- ◉ Sac stérile
- ◉ Bandes de gaze
- ◉ Traction par 1 litre
- ◉ Parachute-like pack *

*Dildy GA et al. An effective pressure pack for severe pelvic hemorrhage. Obstet Gynecol. 2006;108:1222-1226

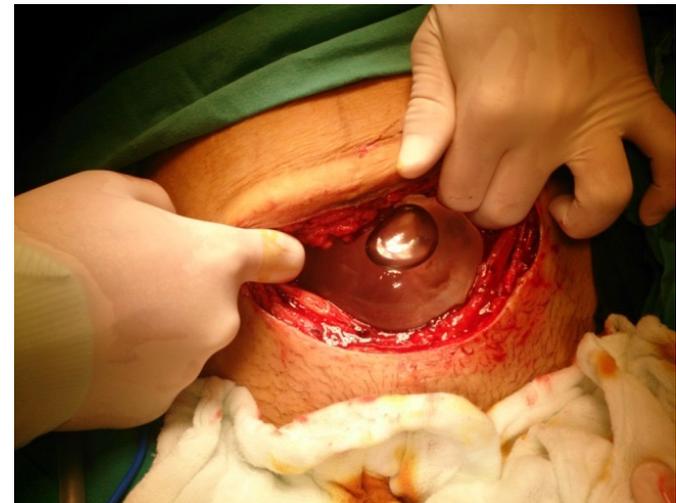
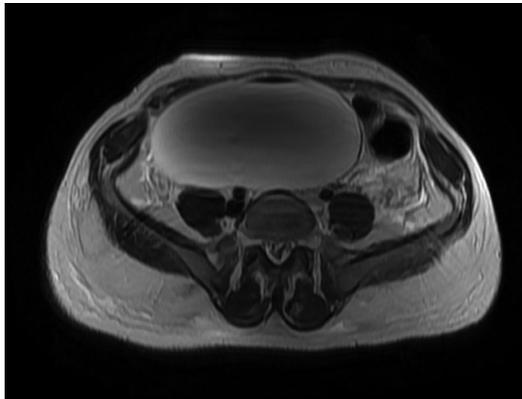


Techniques du packing

The Foley Catheter–Condom Tamponade

- ◉ 1 case report
- ◉ Préservatif gonflé par 2200 cc de sérum physiologique

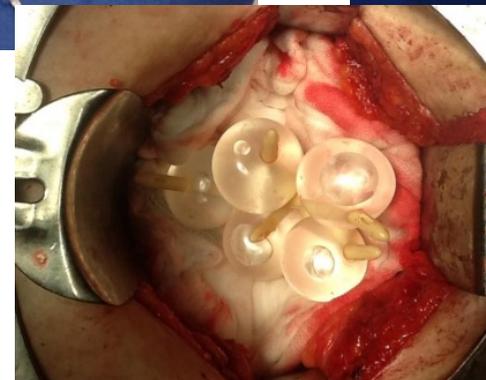
Atilgan R et al. Successful management of pelvic bleeding after caesarean hysterectomy by means of Foley catheter-condom balloon tamponade. *BMJ Case Rep.* 2014;204:770.



Techniques du packing

Combinaison champs stériles + sondes de Foley

- ◉ 1 article
- ◉ 8 patientes
- ◉ Traction

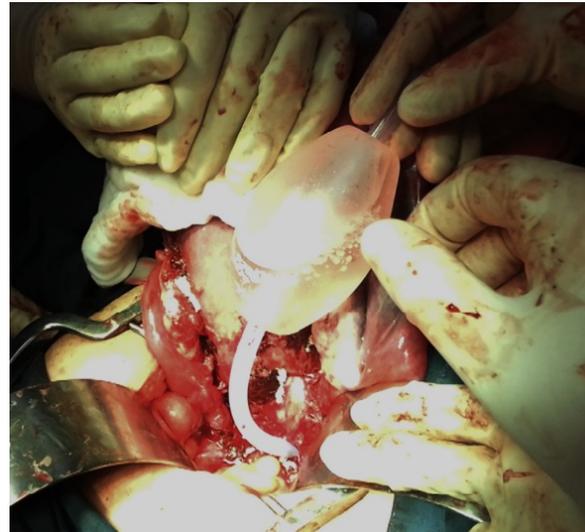
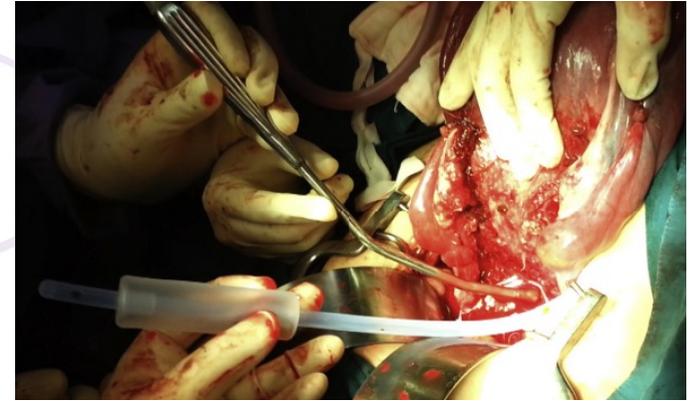


Naranjo-Gutiérrez LA et al. Pelvic packing with vaginal traction for the management of intractable hemorrhage. *Int J Gynaecol Obstet.* 2014;127:21–24.

Techniques du packing

La sonde de Bakri

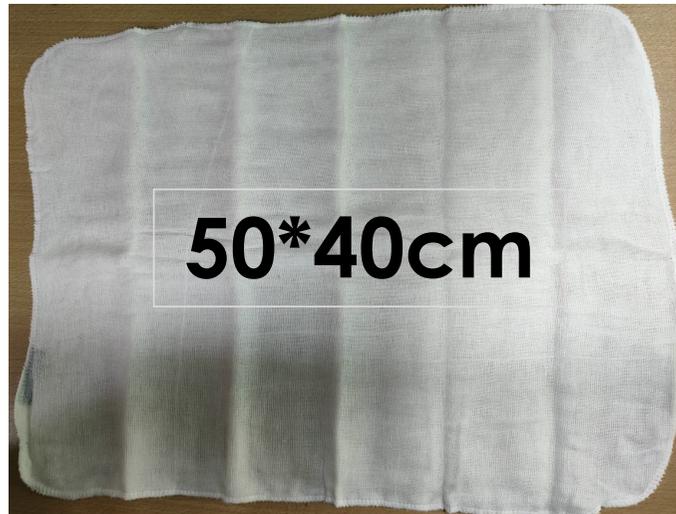
- ⦿ Case report
- ⦿ Utérus en place
- ⦿ Adhérences postérieures
- ⦿ Traction



Charoenkwan K. Use of the Bakri postpartum balloon in a patient with intractable pelvic floor hemorrhage: when other methods failed to stop postcesarean bleeding, physicians tried something new. Am J Obstet Gynecol. 2013;209:277:e1–e5.

Techniques du packing

⦿Laparotomy pads



Indications du packing pelvien

Damage-Control Surgery for Obstetric Hemorrhage



Luis D. Pacheco, MD, M. James Lozada, DO, George R. Saade, MD, and Gary D. V. Hankins, MD

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Box 1. Common Intraoperative Indications for Damage-Control Surgery Secondary to Bleeding

- Venous bleeding not amenable to surgical control
- Persistent bleeding despite transfusion of large amounts of blood products (greater than 10 units packed red cells)
- Persistent and escalating fluid requirements in the setting of active nonarterial bleeding
- Hemodynamic instability or development of ventricular arrhythmias
- Coagulopathy resulting from a combination of hypothermia (temperature less than 35°C), acidosis (pH less than 7.3), and loss of clotting factors

Indications du packing pelvien

Pelvic Packing for Intractable Obstetric Hemorrhage After Emergency Peripartum Hysterectomy: A Review



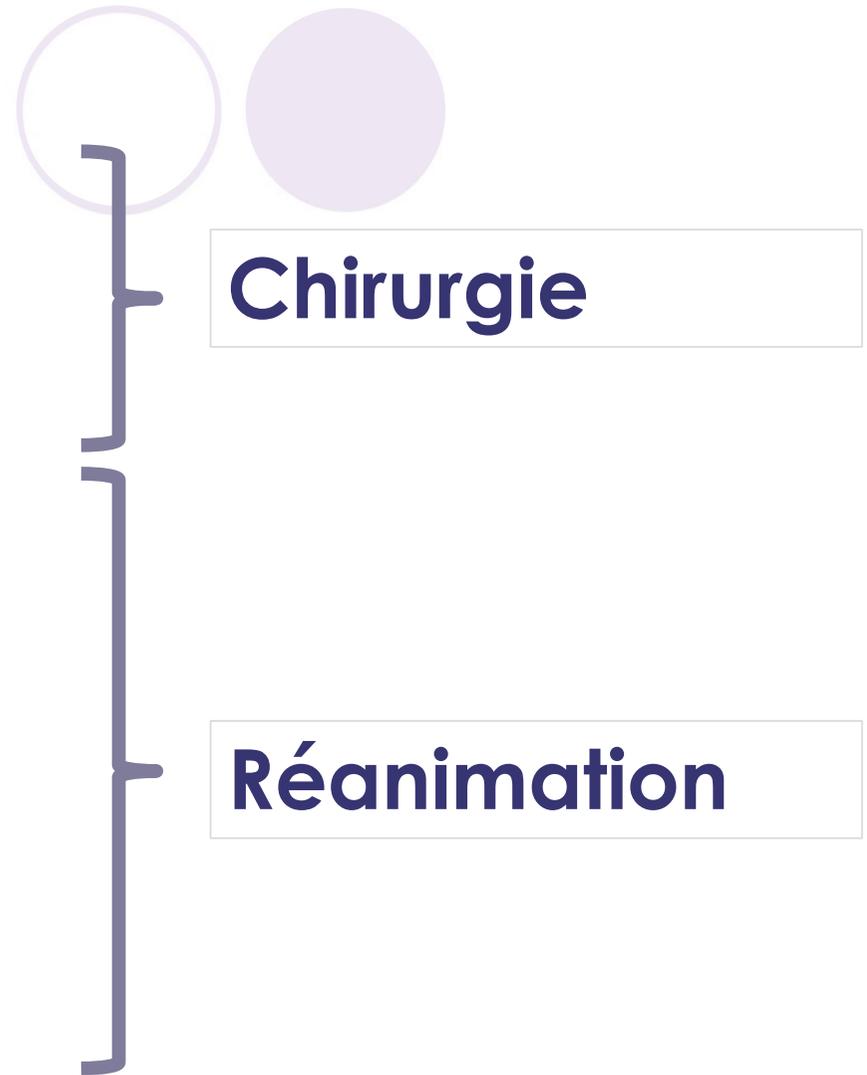
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Omar Touhami, MD,* Arij Bouzid, MD,† Sofiene Ben Marzouk, MD,‡
Mahdi Kehila, MD,§ Mohamed Badis Channoufi, MD,§¶ and Hayen El Magherbi, MD||

Decision to pack the pelvis is generally taken when nonsurgically controllable hemorrhage associated with clinical and laboratory evidence of coagulopathy has developed and blood loss cannot be replaced adequately in the face of continuous hemorrhage after an EPH. Therefore, pelvic packing can be considered as a “rescue ending procedure.”

In our opinion, the decision to perform a packing or not takes mostly into consideration the severity of the bleeding following the hysterectomy and therefore is rather subjective and often based on the surgeon's clinical judgment.



Chirurgie

Réanimation

Damage-Control Surgery for Obstetric Hemorrhage



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Abdominal-pelvic packing completed in the operating room

Hemostatic resuscitation

- Blood products as indicated to maintain
 - Platelets $>50,000/\text{mm}^3$,
 - Fibrinogen $>150\text{--}200\text{ mg/dL}$,
 - Hemoglobin $>8\text{ g/dL}$, and
 - Normal bleeding times (PT, aPTT)
- Consider thromboelastography to guide transfusions and use of pharmacological adjuvants (eg, tranexamic acid)
- Avoid excessive resuscitation with crystalloids or colloids
- Replace calcium and treat hyperkalemia
- Normalize temperature

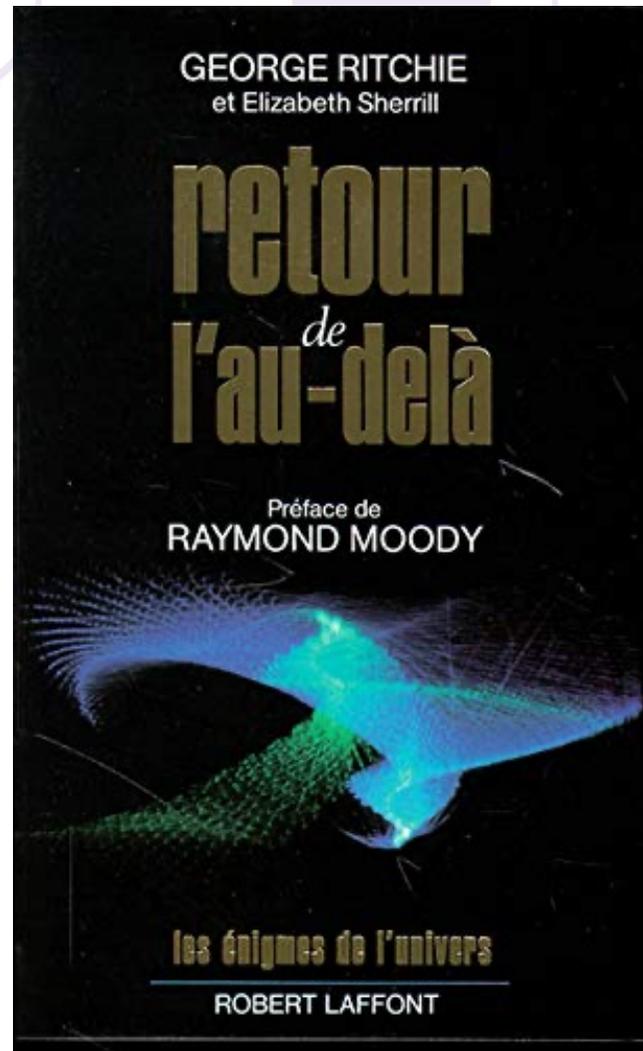
Intensive care management

- Lung-protective mechanical ventilation*
- Adequate analgesia or sedation†
- Early enteral feeding may be considered
- Mechanical DVT prophylaxis until bleeding risk decreases‡
- Guide fluid therapy based on dynamic measures of preload (eg, documenting increases in cardiac output with fluid therapy using noninvasive monitors if available)
- For persistent hemodynamic instability, consider active bleeding not controlled by surgical packing (may need surgical exploration)

Abdominal compartment syndrome

- If ACS is suspected (unexplained hypotension with or without oliguria or high-peak pressures on ventilator), document bladder pressure
- If ACS is confirmed, surgical decompression may be warranted
- Adjunctive medical interventions to lower abdominal pressures (see text)

Notre expérience





Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and
Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb



Efficacy and safety of pelvic packing after emergency peripartum hysterectomy (EPH) in postpartum hemorrhage (PPH) setting

Touhami Omar ^{a,*}, Sofiene Ben Marzouk ^b, Mahdi Kehila ^a, Laidi Bennasr ^b, Aymen Fezai ^b,
Mohamed Badis Channoufi ^a, Hayen El Magherbi ^b

<http://dx.doi.org/10.1016/j.ejogrb.2016.04.013>
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- ◉ 4 ans
- ◉ Service C du centre de maternité de Tunis
- ◉ 68306 accouchements
- ◉ 106 hystérectomies d'hémostase, 1.5 / 1000 accouchements
- ◉ 39 HPP grave, 17 packing pelviens

Efficacy and safety of pelvic packing after emergency peripartum hysterectomy (EPH) in postpartum hemorrhage (PPH) setting

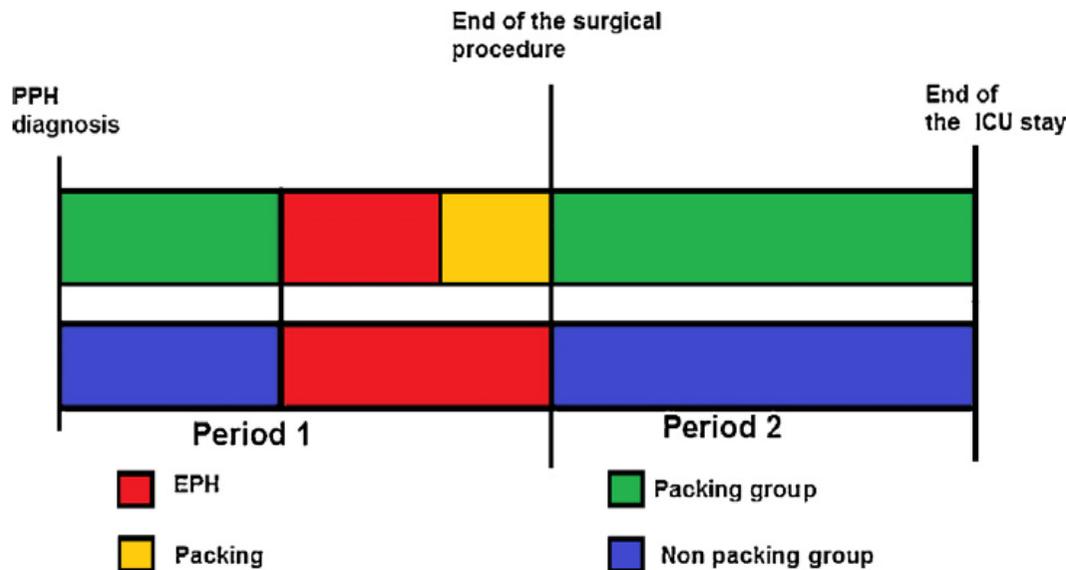


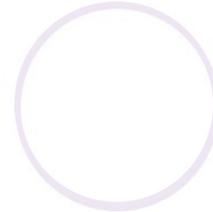
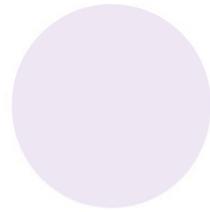
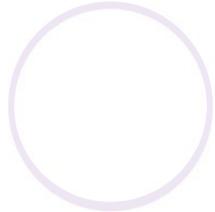
Fig. 1. Period 1 (P₁), Period 2 (P₂) in packing group and non-packing group.

Demographic characteristics of the patients, route of delivery, cause of PPH and surgical management before EPH.

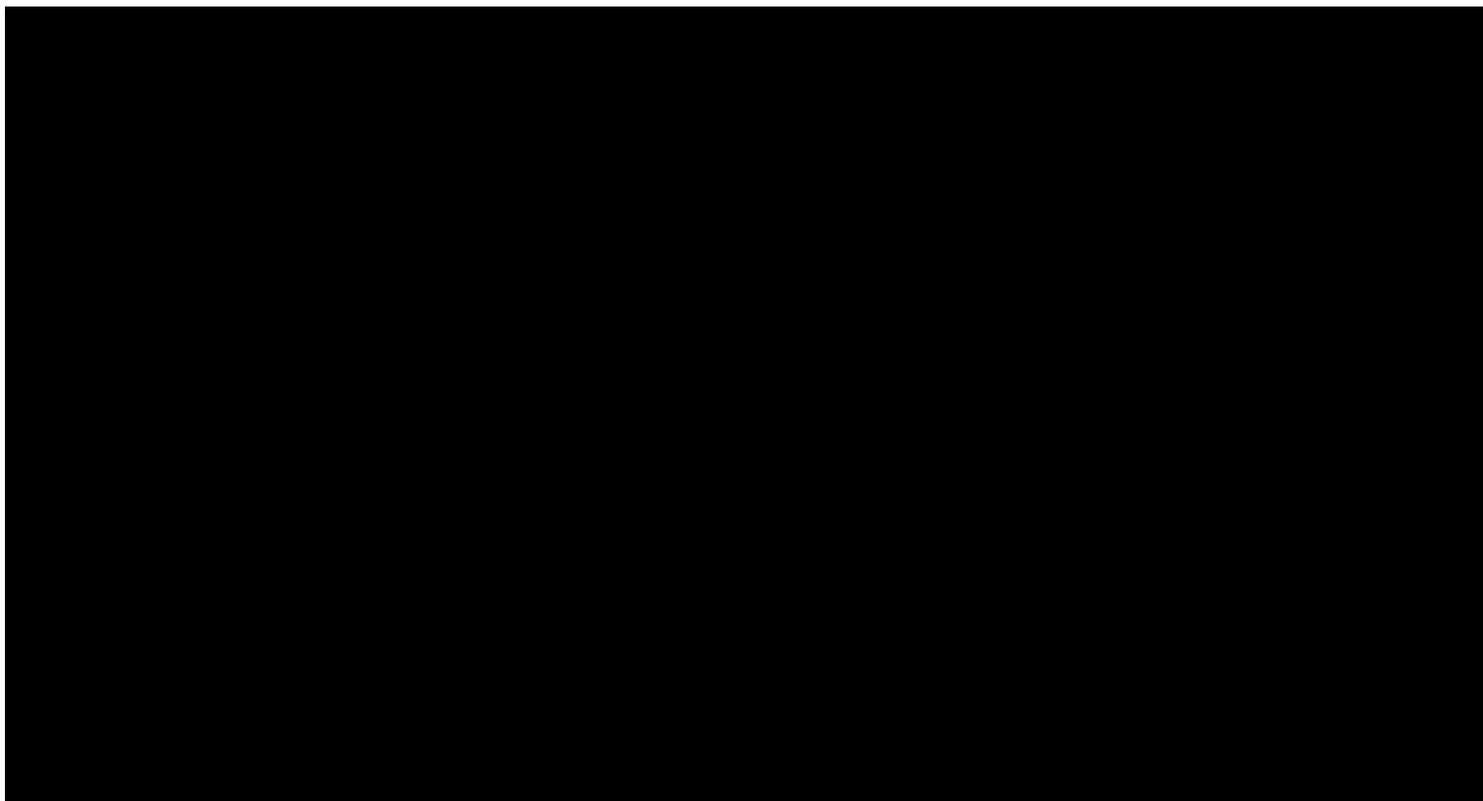
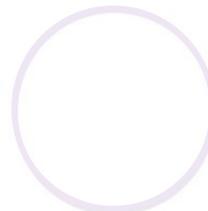
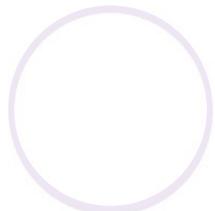
	Packing group (n = 17)	Non-packing group (n = 22)	p-Value
Demographic characteristics			
Age (years), mean ± standard deviation	33.9 ± 5.5	33.7 ± 4.7	0.8
Gestivity, median	3	3	0.4
Parity, median	3	3	0.9
Gestational age (weeks), mean ± standard deviation	38.2 ± 1.6	36.8 ± 2.9	0.1
Route of delivery			
Vaginal	5 (29.4%)	5 (22.7%)	0.3
Cesarean	12 (70.6%)	17 (77.3%)	
Cause of PPH			
Uterine atony	11 (64.7%)	17 (77.3%)	0.6
Placenta accreta/increta	2 (11.8%)	2 (9.1%)	
Placenta previa	1 (5.9%)	0 (0%)	
Uterine rupture	2 (11.7%)	1 (4.5%)	
HELLP syndrome	1 (5.9%)	0 (0%)	
Placental abruption	1 (5.9%)	2 (9.1%)	
Surgical management before EPH			
B-Lynch suture	10 (58.8%)	12 (54.5%)	0.7
Uterine artery ligation	12 (70.5%)	15 (38.1%)	0.8
Internal iliac artery ligation	15 (88.2%)	20 (90.9%)	0.7

PPH: postpartum hemorrhage; EPH: emergency peripartum hysterectomy.

Vidéo:



Vidéo:



Efficacy and safety of pelvic packing after emergency peripartum hysterectomy (EPH) in postpartum hemorrhage (PPH) setting

Blood products transfusion in P₁ and P₂.

	Packing group (n = 17)	Non-packing group (n = 22)	p-Value
Blood products transfusion in P₁, mean ± standard deviation			
PRBC units	16.6 ± 5.3	14 ± 5	0.04
Fresh frozen plasma Transfusion units	24.5 ± 11.6	16.7 ± 8.7	0.01
Platelet transfusion units	12 ± 8.7	9.6 ± 8.9	0.4
Blood products transfusion in P₂, mean ± standard deviation			
PRBC units	3 ± 4	4.9 ± 7.9	0.3
Fresh frozen plasma Transfusion units	5.9 ± 7.7	4.3 ± 9.4	0.3
Platelet transfusion units	4.9 ± 6.7	4.2 ± 9.3	0.2
Total blood products transfusion P₁ + P₂, mean ± standard deviation			
PRBC units	19.5 ± 7.7	19 ± 8.7	0.5
Fresh frozen plasma Transfusion units	30.1 ± 15.4	21 ± 13.6	0.02
Platelet transfusion units	16.1 ± 9.5	13.8 ± 14	0.2

PRBC: packed red blood cells.

Efficacy and safety of pelvic packing after emergency peripartum hysterectomy (EPH) in postpartum hemorrhage (PPH) setting

- ⊙ **Packing pelvien : succès 100%**



- ⊙ No packing groupe: 2 reprises (1 cas laparotomie avec packing, 1 cas embolisation)
- ⊙ Séjour en réanimation: pas de différence
- ⊙ Durée de ventilation mécanique: pas de différence

Efficacy and safety of pelvic packing after emergency peripartum hysterectomy (EPH) in postpartum hemorrhage (PPH) setting

Post-intervention complications.

	Packing group (<i>n</i> = 17)	Non-packing group (<i>n</i> = 22)	<i>p</i> -Value
Febrile morbidity	9 (53%)	2 (9%)	0.04
Generalized sepsis	3 (18%)	1 (4%)	0.3
Renal failure	4 (23%)	4 (18%)	0.7
ARDS	5 (29%)	2 (9%)	0.1
Deep vein thrombosis	3 (18%)	2 (9%)	0.6
MOF	2 (12%)	5 (23%)	0.4

ARDS: acute respiratory distress syndrome; MOF: multiple organ failure.

Pelvic Packing for Intractable Obstetric Hemorrhage After Emergency Peripartum Hysterectomy: A Review

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Type of Pack	References	No. Patients	Success Rate, %
Umbrella pack	9,11–13,16	14	85 (12/14)
Using laparotomy pads or roller gauze	10,14,15,17,22	78	74.3 (58/78)
Foley catheter–condom tamponade	20	1	100 (1/1)
Combining Foley catheter and pads	19	8	100 (8/8)
Bakri balloon	18	3	100 (3/3)
Total		104	78.8 (82/104)

Maternal Morbidity

Complications After Pelvic Packing	Patients (n = 104), n (%)
Sepsis	48 (46.1)
Septic shock	5 (4.8)
Acute pulmonary edema	9 (8.6)
Acute respiratory distress syndrome	14 (13.4)
MOF	12 (11.5)
Deep vein thrombophlebitis	14 (13.4)
Pulmonary embolism	5 (4.8)
Acute renal failure	13 (12.5)
Pelvic hematoma	13 (12.5)
Bowel infarction	1 (0.96)
Occlusive syndrome	7 (6.7)
Pelvic organ laceration	7 (6.7)

Le syndrome du compartiment abdominal

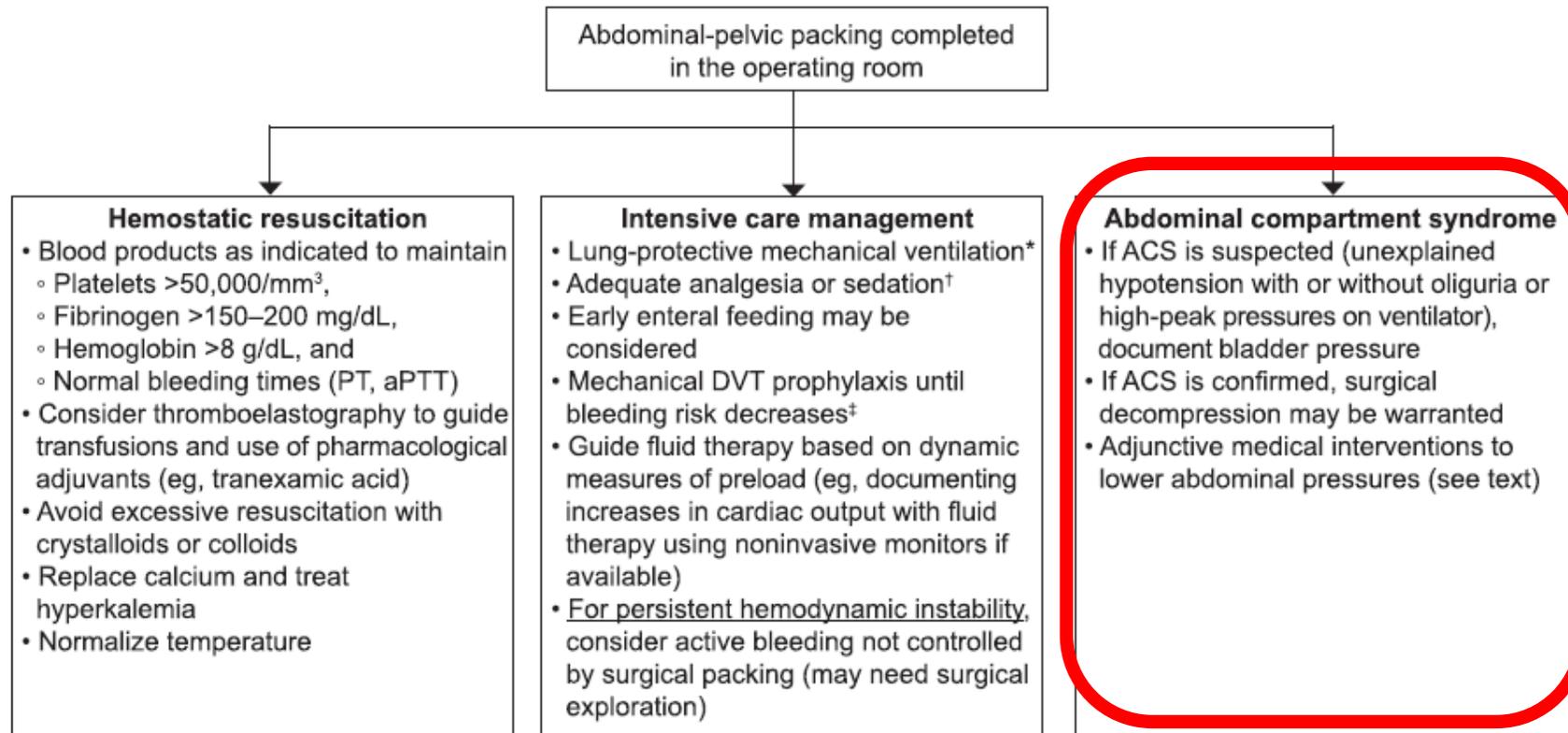
Damage-Control Surgery for Obstetric Hemorrhage

OBSTETRICS &
GYNECOLOGY



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Packing pelvien: pour quelle durée?



- ⊙ La décision est difficile!!!!
- ⊙ Dépacking précoce/risque de récurrence de l'hémorragie.
- ⊙ Dépacking tardif/ risque accru de sepsis, lésions viscérales, Sd

Durée optimale dès que les troubles d'hémostases sont corrigés et la patiente stabilisée (24 à 48 h)

43,25h (7-96h).

Take home messages



- ⦿ Principe de Damage Control Surgery
- ⦿ Technique simple et reproductible
- ⦿ Intérêt en l'absence de plateau technique d'embolisation

● ○ **MERCI** ○ ●

