# MANAGEMENT OF POST PARTUM HAEMORRHAGE

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# Plan

- Introduction.
- Vital statistics.
- Etiologies of PPH.
- Risk Factors to Specific Etiologies.
- Management of PPH.
- Conclusion.

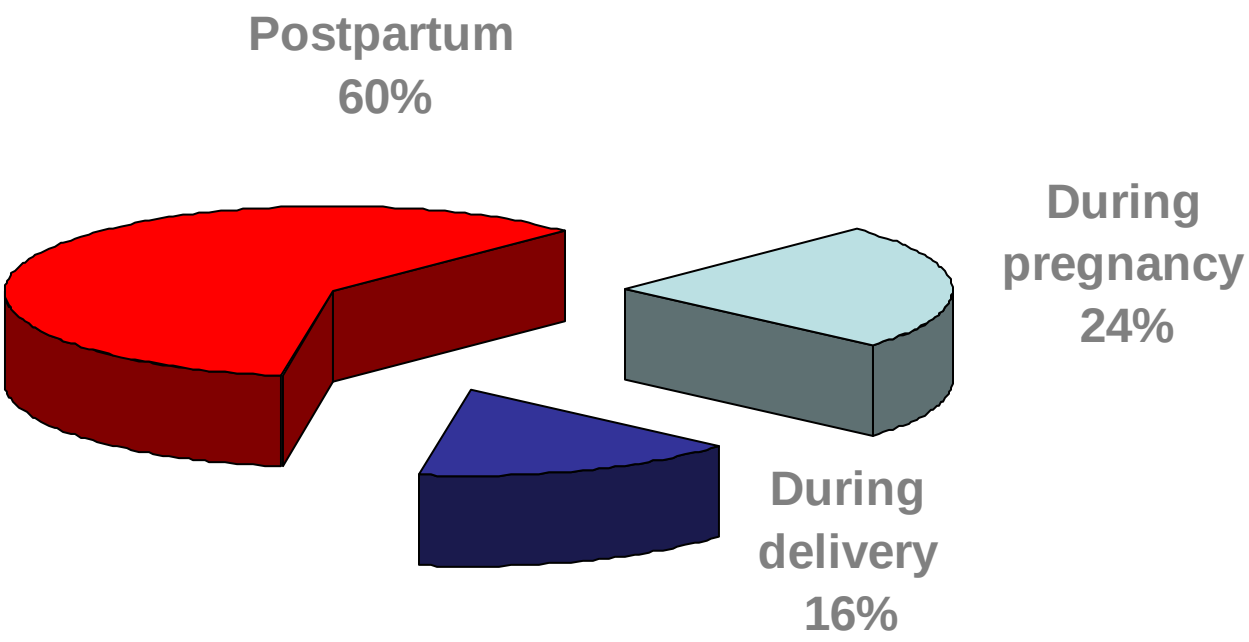
# INTRODUCTION

- Maternal mortality, dramatic reduction, since blood transfusion.
- Haemorrhage remains prominent cause of maternal mortality.
- Delivery followed by <500ml, volume >500ml after 3rd stage, constitutes PPH.
- Placenta delivery, AMTSL, maternal surface (Duncan), foetal surface (Baudelocque).
- Postpartum period: immediate, early and late.
- PPH divided into 1ary and 2ary (1-42 days).

# Introduction-1

- Over half a million women die during pregnancy and childbirth each year
- 99% in developing countries
- 150,000 women bleed to death
- Postpartum haemorrhage is the major cause of maternal deaths
- Most deliveries are attended by non-skilled persons, often at home, when there are poorly functioning health systems
- Skilled care with a functional health system can make a difference

# Vital Statistics.



## WHO analysis of causes of maternal death: a systematic review

*Lancet 367: 1066-1074, 2006*

| Country | Year | Maternal Death | MMR | Haemorrhage |
|---|---|---|---|---|
| DR Congo | 97 | 143 | 510 | 16% |
| Egypt | 200 | 84 | 585 | 30% |
| Senegal | 202 | 87 | 690 | 22% |
| Tanzania | 88 | 76 | 529 | 23% |
| South Africa | 203 | 121 | 150 | 10% |
| Zambia | 98 | 349 | 729 | 28% |
| Zimbabwe | 201 | 92 | 695 | 19% |
| MCW Africa | 201 | 55 | 334 | 33% |

# ETIOLOGY OF POSTPARTUM HAEMORRHAGE.

- PPH several predisposing factors, more than two may exist in the same patient.
- Causes may be summarised by four P´s.

1. Placental abnormalities: retention, placenta praevia, accreta, abruption.
2. Passage (genital tract trauma): tears /lacerations.
3. Porter (uterus): C/S, caesarean hysterectomy, uterine rupture, uterine atony, uterine inversion.
4. Plasma: Coagulation defects / DIC.

# Etiology of PPH: INSERM Study 1998

| Etiology | Number of cases | Percent | |
|---|---|---|---|
| Atony | 69 | 42% | |
| Placenta Retention | 27 | 16% | |
| Uterine rupture+cervical tear | 25 | 15% | |
| PP+Accreta | 19 | 11% | |
| Abruptio placenta | 18 | 10% | |
| Caesarean section | 4 | 2.4% | |
| Others | 3 | 1.8% | |

# RISK FACTORS: PLACENTAL ABNORMALITIES

- Previous uterine scar ( C/S, Myomectomy, uterine perforation).
- Large placentas (multiple pregnancy, succenturate placenta, diabetes, Rhesus incompatibilities, molar pregnancy).
- IUD, chorioamnionitis.
- Poor management of 3rd stage labour.

# RISK FACTORS: GENITAL TRACT TRAUMA

- Instrumental deliveries (forceps, vacuum extraction).
- Previous perineal tears, short perineum, vaginoplasty.
- Episiotomy done early in labour.
- Surgery / scar cervix.
- Poor conduct of delivery.
- Macrosomia >4000gms, shoulder dystocia, malposition, internal podalic versions.

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# RISK FACTORS: UTERINE RUPTURE

- Previous scarred uterus.
- Grandmultiparity.
- Use of oxcytocics, misoprostol.
- Use of traditional oxcytocics (honey).
- Previous induced abortions with perforation of uterus.
- Intra-uterine manipulations (internal podalic version, destructive deliveries).
- Foetal malformation (conjoint twins, hydrocephalus etc).
- Poor conduct of delivery (abdominal expression, shoulder dystocia).

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# RISK FACTORS: UTERINE ATONY

- Over distension of uterus (multiple foetuses, hydramnios).
- Placental abruption (Couvelaire's uterus).
- Exhausted myometrium (precipitated or vigorous labour, prolonged labour, use of oxcytocics, anaesthesia = halogenated agents, conduction anaesthesia).
- Past history of PPH.
- Myomatous uterus.
- Grandmultiparity, chorioamnionitis.
- Traditional practices e.g. hot water.

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# RISK FACTORS: UTERINE INVERSION

- Less frequent, prevalence 1 in 2000-7000 deliveries.
- Poor management of 3rd stage of labour.
- Placenta accreta.
- Active management of 3rd stage of labour facilitates diagnosis and treatment.
- Divided into 4 stages, may be acute, sub-acute or chronic.

# RISK FACTORS: COAGULATION DEFECTS

- Placental abruption.
- Intra-uterine death.
- Amniotic fluid embolism.
- Induced abortions.
- Chorioamnionitis.
- Massive blood transfusion.
- Eclampsia/ severe pre-eclampsia.
- Coagulation defects e.g. coagulation factor defficiency.
- Autoimmune thrombocytopenia.
- Drugs: anticoagulants.

# MANAGEMENT OF PPH

**Estimation of blood loss:**

- Visual estimate, usually under estimate.
- Haemodynamic parameters (BP, pulse, CVP).
- Tilt test (orthostatic hypotension).
- Urine flow.

- **Treatment:**
  - General measures: Set up IV-line, Fluid /blood replacement until urine flow varies 30-60ml/hr, Hct of 30%. Fresh blood and Ringer lactate solution preferably.

# MANAGEMENT OF PPH (1)

- Etiologic measures. Treat the underlying cause.
- Preventive measures:

- Type and cross match blood for high risk patients (P/H of PPH, grandmultiparity, placenta praevia, placental abruption, severe PET/eclampsia etc).
- Active management of 3rd stage of labour.
- Continue IV oxcytocics infusion in induced or augmented labour.

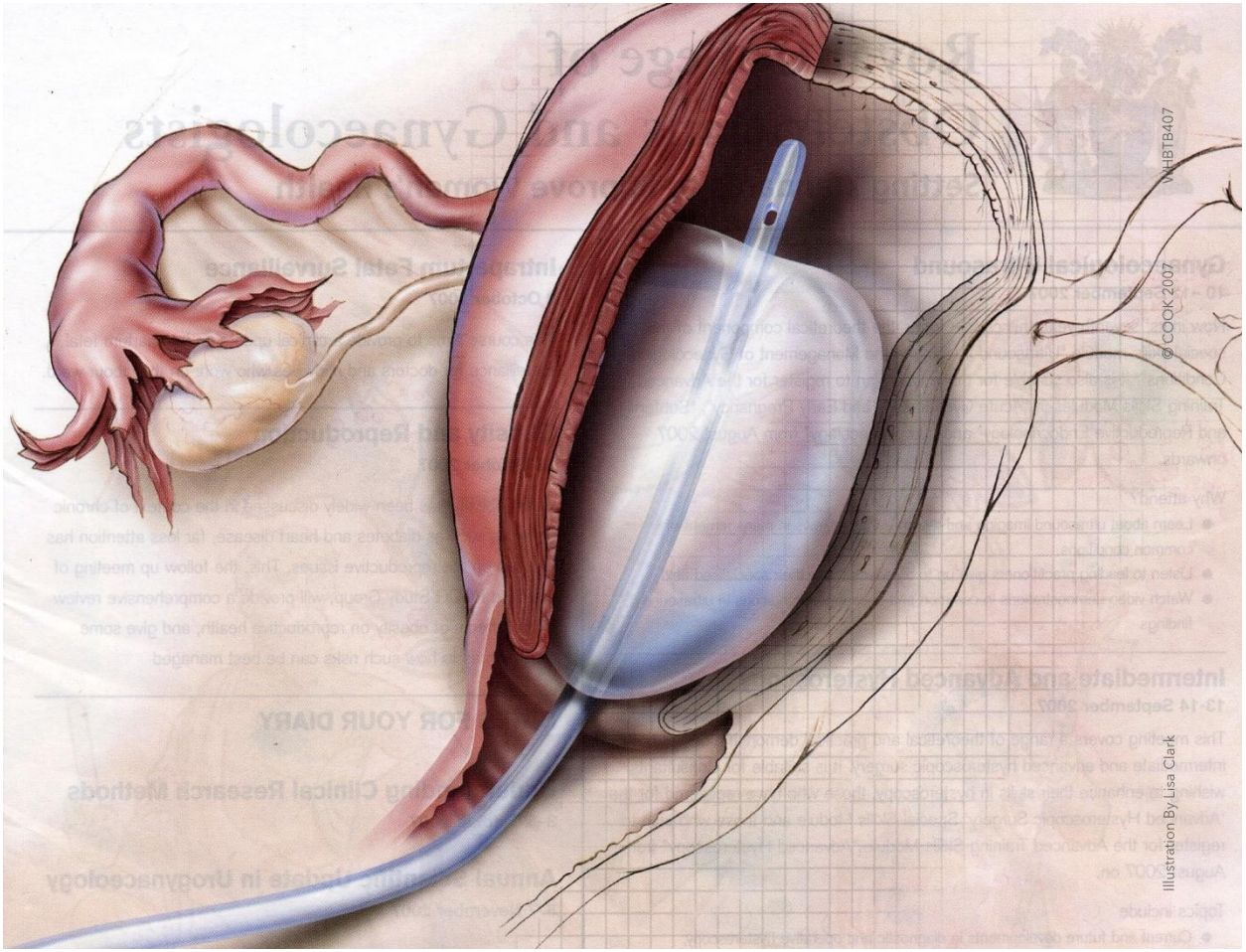
# Uterine Atony

**Oxytocin 5 UI IV slowly**
**10 UI intra-mural**
**20 UI / 500 cc pass in an hour.**

- **Misoprostol IR (During uterine revision) 3 tabs of 200µg ?**

- **Sulprostone (Nalador) !!!**

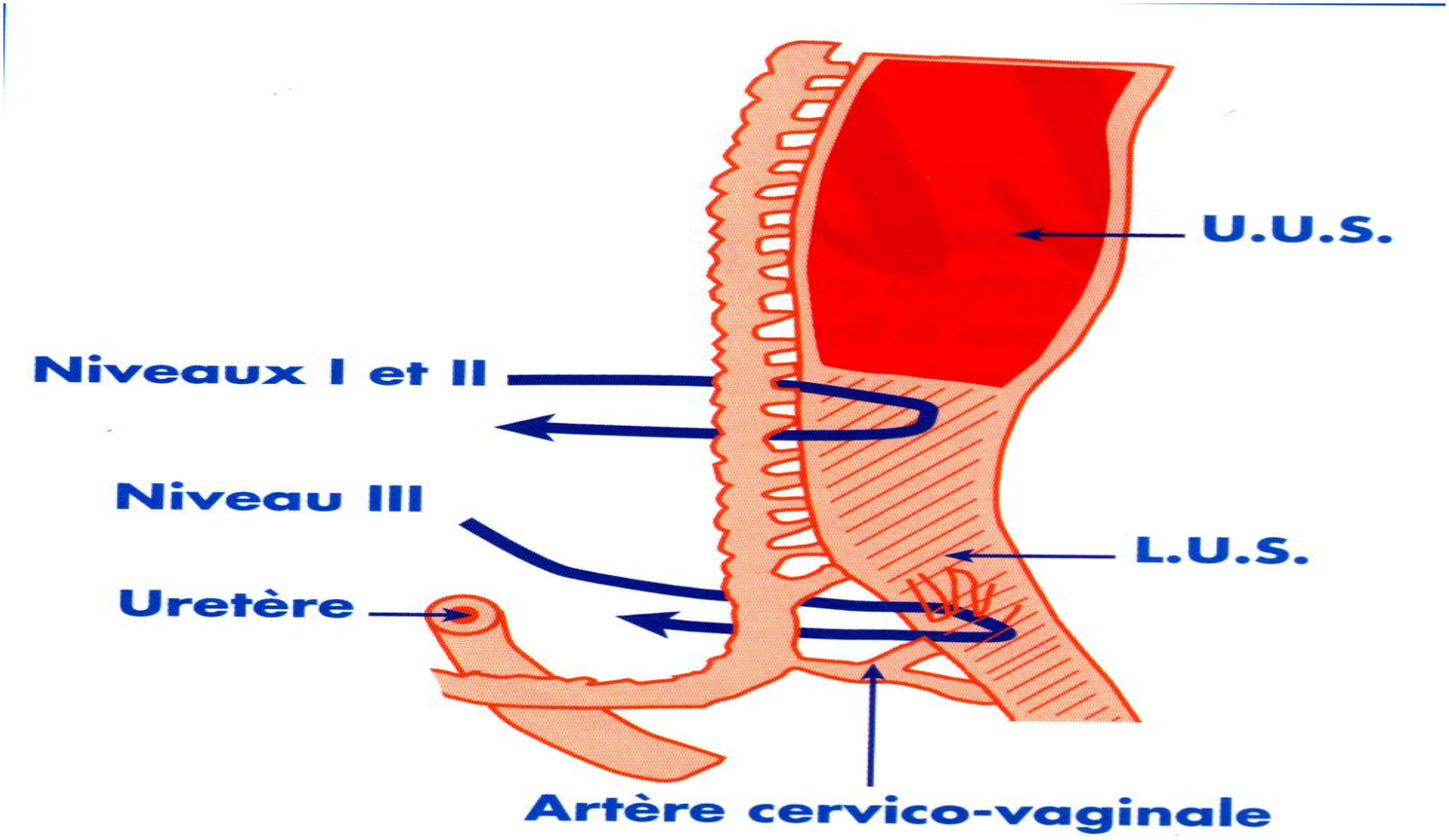
# Uterine Atony-1



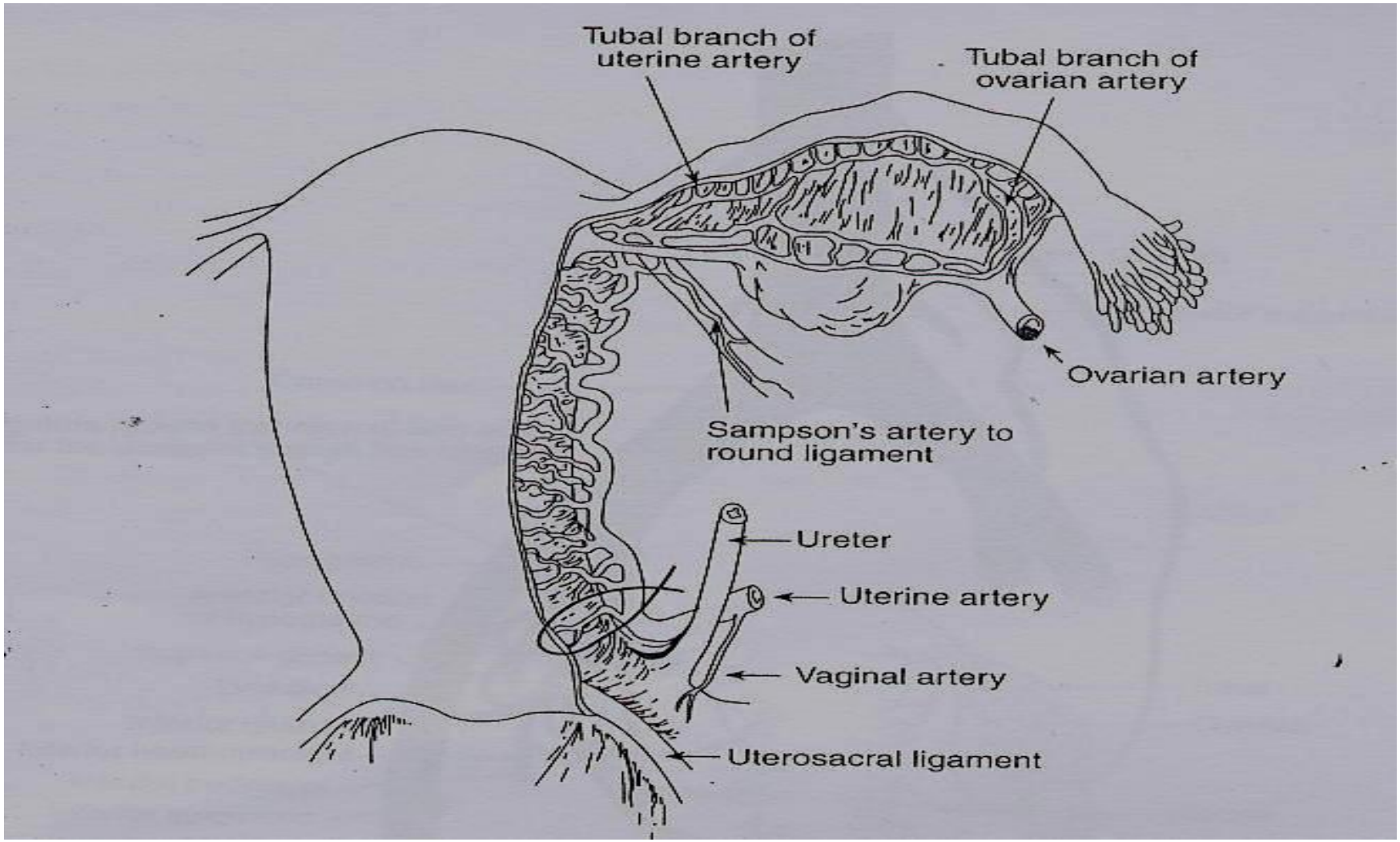
# Surgical Management of PPH

- Surgical procedures range from conservative to radical surgery:
- Ligation of the Arterial supply to the uterus.
- Embolisation of the Artery.
- Sub-total hysterectomy.
- Total abdominal hysterectomy.
- N:B However, the choice of type of treatment will depend on the infrastructure, the competence of the team and the haemodynamic status of the patient.

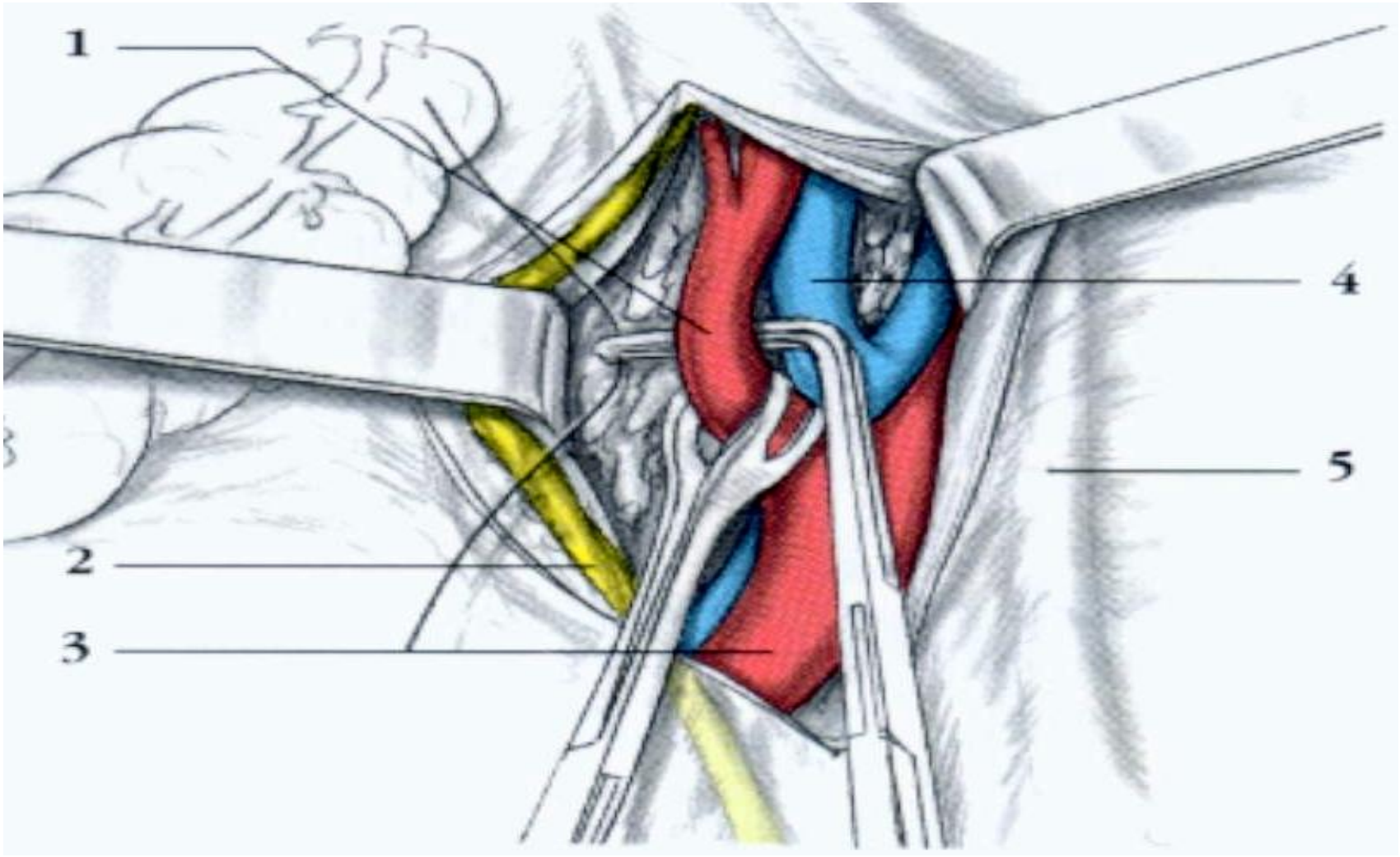
# Uterine Atony-2



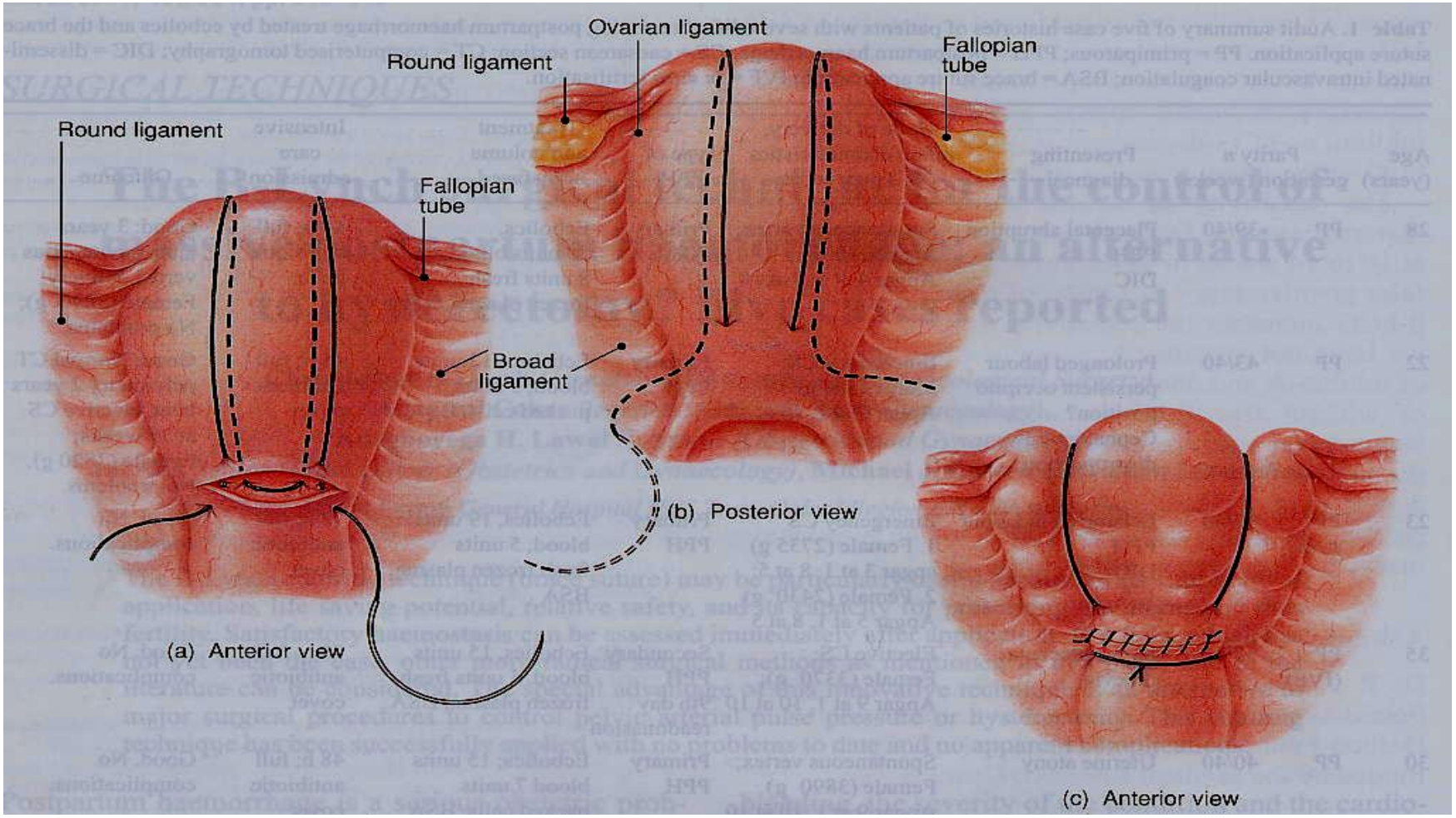
# Uterine Atony, selective ligation



# Ligation of the Hypogastric Artery

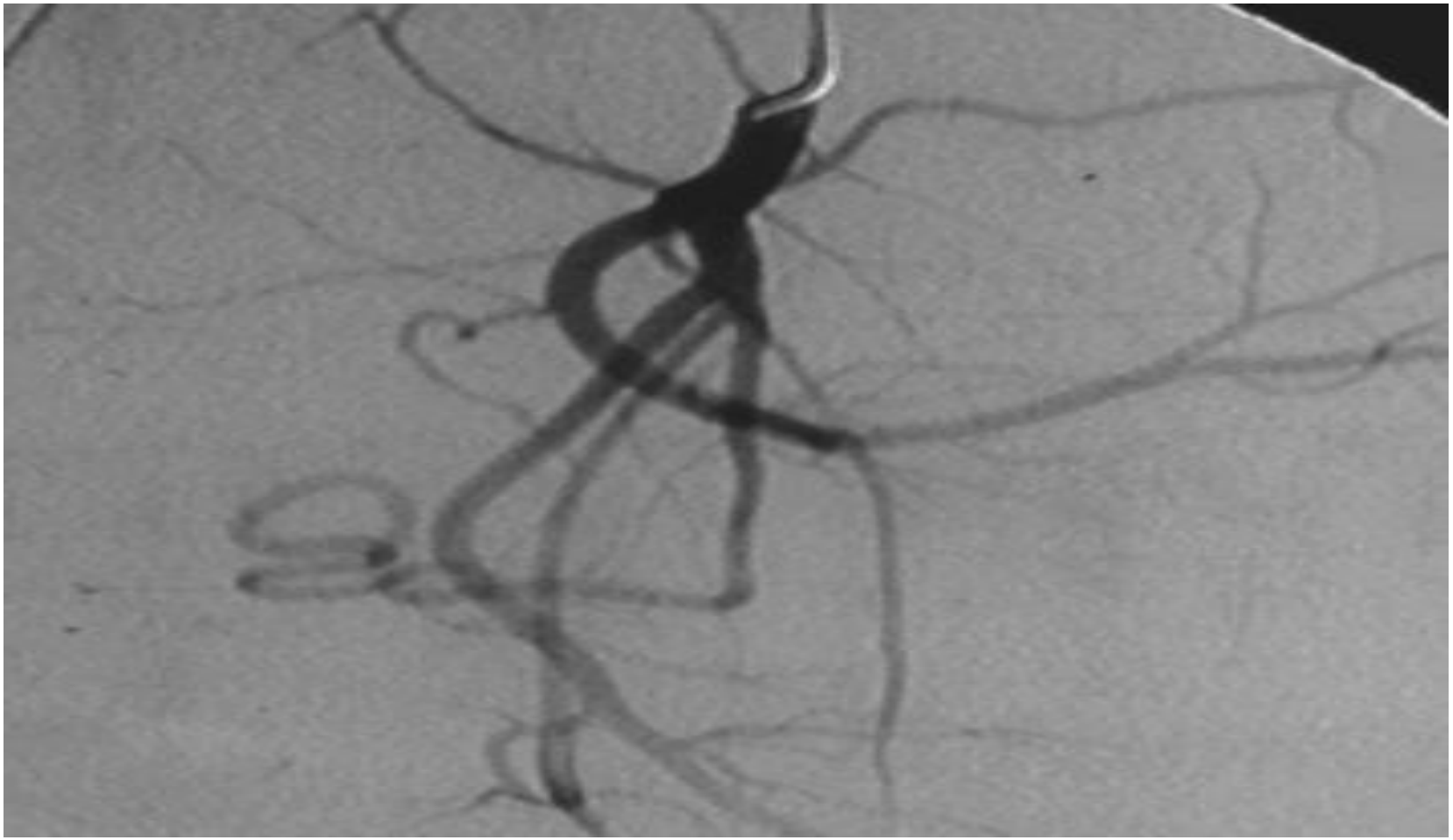


# Uterine Compression Sutures

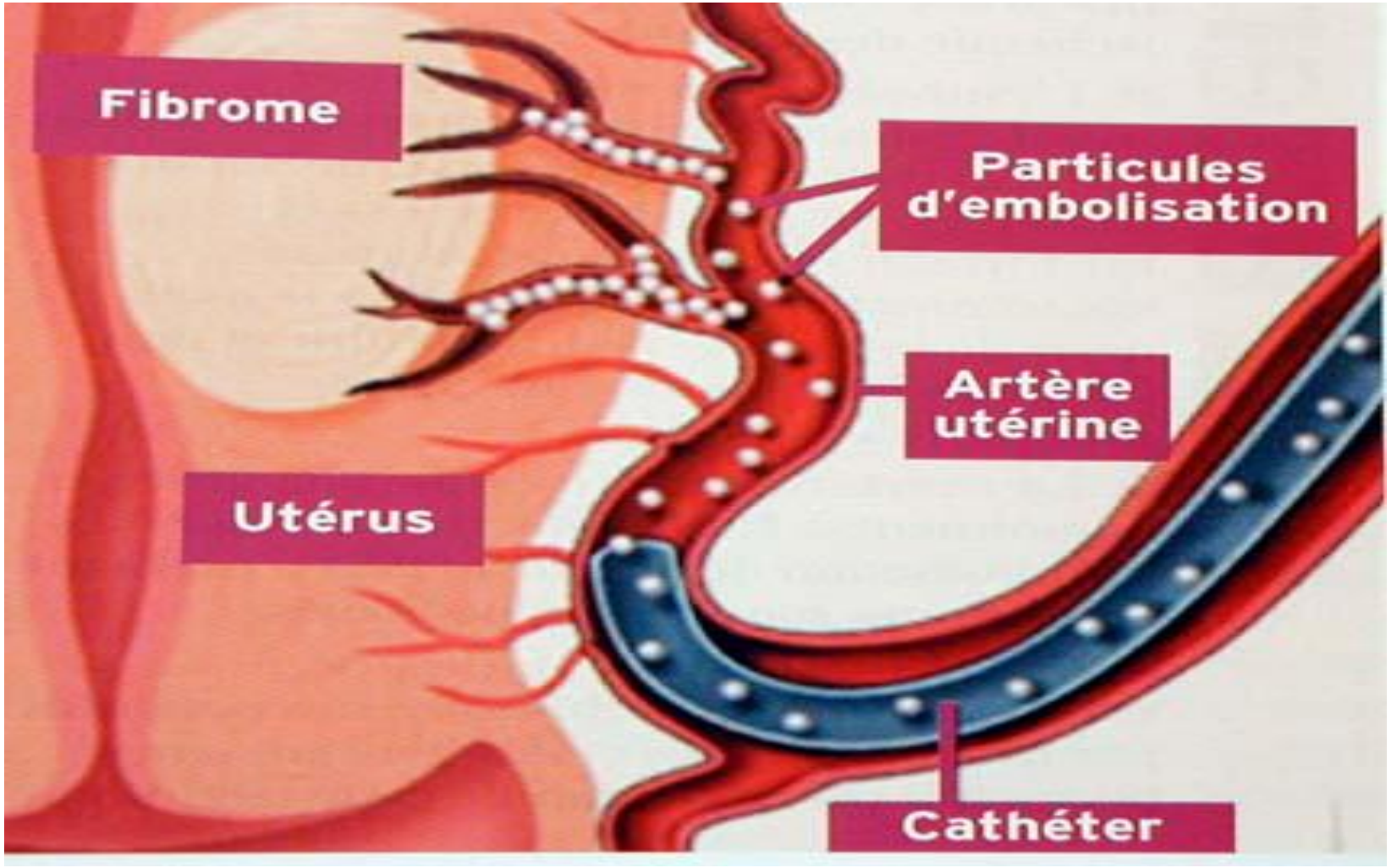



Hayman RG, Arulkumaran S, Steer J. Uterine compression sutures: surgical management of postpartum haemorrhage. Obstet Gynecol. 2002;99:502–6.

# Embolisation of Hypogastric Artery



# Technique of embolisation



# DISSEMINATED INTRAVASCULAR COAGULATION

- Pregnancy causes increase in clotting factors (I, II, VII, VIII, IX, X).
- Plasminogen levels are increased.
- Plasmin activity during the antepartum is decreased.
- Various stresses incite conversion of plasminogen to plasmin, especially coagulation mechanism.
  - Extrinsic pathway, release of tissue thromboplastin (placenta, amniotic fluid, myometrium).

# DISSEMINATED INTRAVASCULAR COAGULATION (1)

- Intrinsic pathway by collagen and other tissue to which plasma is exposed through loss of endothelial intergrity (rupture, retroplacental haematoma).
- Direct activation of factor x by appropriate enzymes (protease), seen in some bacterial infection or neoplasm.

Plasminogen is activated to plasmin, lyses of fibrinogen, fibrin monomer and polymer, formation of fibrinogen-fibrin degradation products or split products.

# DISSEMINATED INTRAVASCULAR COAGULATION (2)

- Degradation product, depending on size contribute to the defective haemostasis (delay fibrin polymerisation, prolong prothrombin time, impair clot retraction and stability.

The treatment of DIC is a combination of the following:

- Replacement of deficient factors especially fibrinogen.
- Injection of heparin (block further intravascular coagulation).
- Administration of epsilon amino caproic acid (block fibrinolysis).

# CONCLUSION

- **PPH**
  - Obstetrical emergency;
  - May be catastrophic;
  - Grave consequence
  - Necessitates prompt action, involving nurses, hematologist, intensive care Doctor and obstetrician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YOU