

COMPRESSION SUTURE

DR. SHEELA V.MANE

Algorithm for management of Atonic PPH

HAEMOSTASIS

- **H** Ask for Help
- **A** Assess (vital parameters, blood loss) and resuscitate
- **E** Establish etiology + Ensure availability of blood
- **M** Massage uterus
- **O** Oxytocin infusion + Prostaglandins intravenous/ per rectal/ intramuscular/ intra-myometrial

Algorithm for management of Atonic PPH

HAEMOSTASIS

- **S** Shock Garment & Shift to theatre –exclude Tissue or Trauma / Bimanual compression
- **T** Tamponade –Balloon or uterine packing
- **A** Apply compression sutures
 - B-Lynch or modified
- **S** Systematic Pelvic devascularisation
 - Uterine/Ovarian/Quadruple/Internal iliac
- **I** Interventional Radiologist
 - If appropriate uterine artery embolisation
- **S** Subtotal / Total abdominal hysterectomy

Arresting the Bleeding

- The commonest cause of primary PPH is uterine atony. However, clinical examination must be undertaken to exclude other causes:
- Retained products (placenta, membranes, clots)
- Vaginal/cervical lacerations or haematoma
- Ruptured uterus
- Broad ligament haematoma
- Extragenital bleeding

The B-Lynch surgical technique: clinical points

1. User-friendly suture material monocril No.1 mounted on 90-cm curved ethigard blunt needle (codeW3709) (Ethicon, Somerville, NJ). Other rapidly absorbable sutures can be used according to the surgeon's preference. A good length and needle are essential.
2. Basic surgical competence required.
3. Uterine cavity checked, explored and evacuated
4. Suture bends maintain even and adequate tension without uterine trauma or 'shouldering'
5. Allows free drainage of blood, debris and inflammatory material
6. Transverse compression suture applied to the lower segment for abnormal placentation effectively controls bleeding
7. Simple, effective and cost-saving
8. Fertility preserved and proven
9. Mortality avoided
10. World-wide application and successful reports (>1300) (B-Lynch, personal data base, christopherbl@aol.com)
11. Potential for prophylactic application at Cesarean section when signs of imminent postpartum hemorrhage develop, e.g. placenta accreta, or where blood transfusion is declined, e.g. placenta previa surgery on a Jehovah's Witness

- Test for potential efficacy of the B-Lynch before performing the procedure
- Lloyd Davies or semi-lithotomy position (frog leg).
- Assistant stands between the patients leg & swabs the vagina to check the bleeding.
- Uterus is exteriorize & bimanual compression perform
- If the bleeding stops good chance that B-Lynch suture will work
- B-Lynch suture not a substitute for medical t/t of coagulopathy, which should take place along with operative intervention

Combined Applications (Uterine Sandwich Technique)

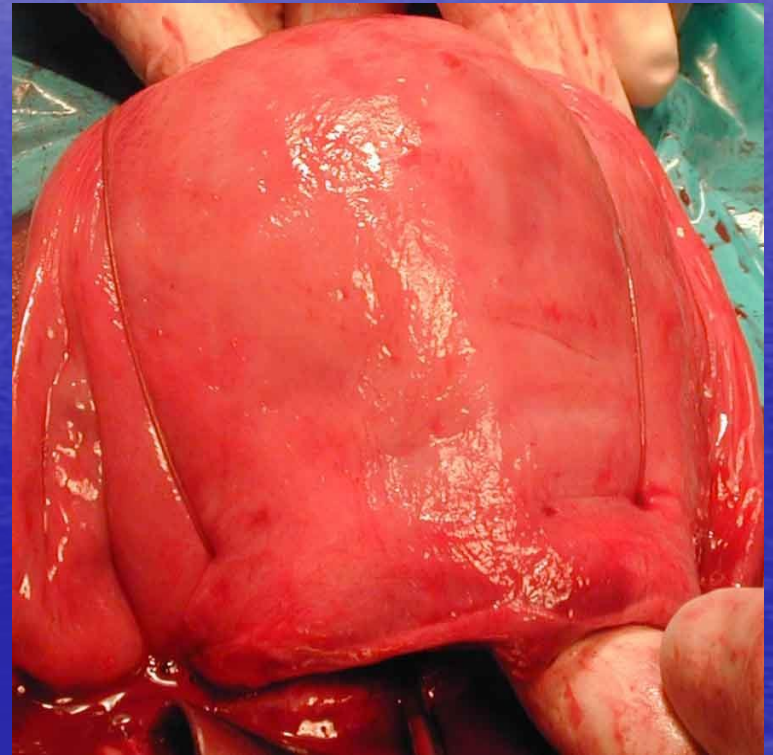
- B-Lynch suture can be useful in combination with other haemostatic mechanisms.
- Use of a balloon tamponade further decreased bleeding after a compression suture is applied
- B-Lynch technique is the only uterine compression suture technique which does not occlude the uterine cavity & hence can be used in combination with an intrauterine balloon.

Combined Applications (Uterine Sandwich Technique)

- It is important to ensure that the following sequence is used when planning to use the combined techniques:
 1. Insert B-Lynch suture techniques as usual.
 2. Insert the balloon & fill it with 100 mL of fluid.
 3. Close the uterine incision taking care not to burst the balloon.
 4. The B-Lynch suture then should be tied off.
 5. Inflate the balloon.
 6. Check for any further bleeding.

B- lynch procedure - modification

- Modified by Dr. Richard Hayman & Prof. S. Arulkumaran
- No LUS incision
- No.2 vicryl or Dexon used
- Straight & blunt needle used to transfix uterus from front to back just above reflection of bladder



Points to consider

B-lynch Brace Suture

- 1. Expertise
- 2. Transverse LUS incision required
- 3. Time consuming
- 4. Cervical stenosis
- 5. Haematometra
- 6. Bleeding from LUS
- due to multiple bites

Modified B- lynch Brace Suture

1. Easy to perform
2. LUS incision not required
3. Less time consuming (takes 3-4 min.)
4. No Cervical stenosis
5. No Haematometra
6. No Bleeding from LUS

Various Other Modifications

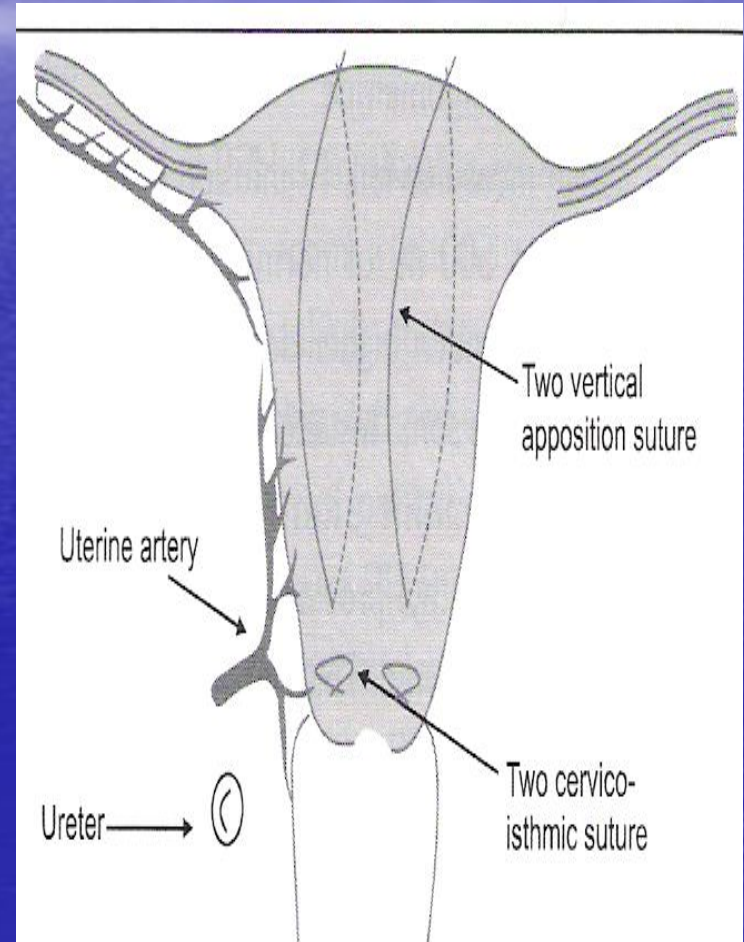
Modifications:

Haymen RG, Arulkumaran S et al.

Obstet Gynaecol 2002 Mar .

**Add to more available
methods for conservative
surgery.**

**Ideal in non-caesarean
cases.**

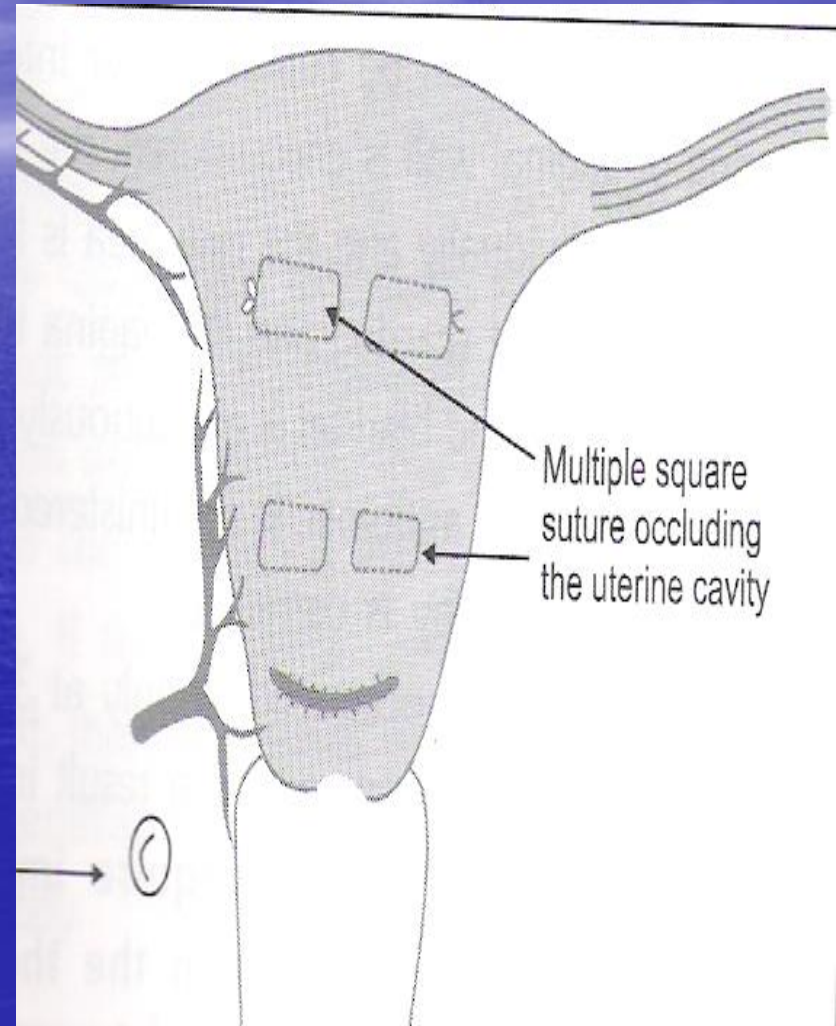


The Hayman uterine compression suture: clinical points

1. Lower uterine segment or uterine cavity not opened
2. Uterine cavity not explored under direct vision
3. Probably quicker to apply
4. No feed-back data on fertility outcome
5. Morbidity feed-back data limited
6. Unequal tension leads to segmented ischemia secondary to slippage of suture – ‘shouldering’ with venous obstruction

Modification
Cho's Square suture.

Much simpler method.



The Cho multiple square sutures: clinical points

1. Multiple full-thickness square sutures applied, probably time-consuming if many square sutures required
2. Uterine cavity drainage restriction-pyometra risk
3. No feed-back data on fertility outcome
4. Morbidity feed-back data limited
5. Rhythmic contraction not facilitated and involution impede
6. The production of multiple uterine senescentiae

Strategies to minimize blood loss

- Loose uterovesical peritoneal fold is incised
- Use of sharp dissection to separate adhesions of prev.CS
- Avoiding wide lateral dissection of bladder to prevent damage to enlarged venous plexuses in broad ligament
- Planning the uterine incision suitably (use of scissors)
- Careful delivery of the fetal head .
- Preferring spontaneous expulsion of placenta (300ml saved)
Prophylactic use of oxytocic drugs
- Clamping the cut edges of the uterine incision with hemostatic forceps & rapid closure .

Control of Intraoperative bleeding

- *Localized site* –

Isolate the bleeding site & use of pressure by a sponge on holder & then deep interrupted sutures to ligate the bleeder.

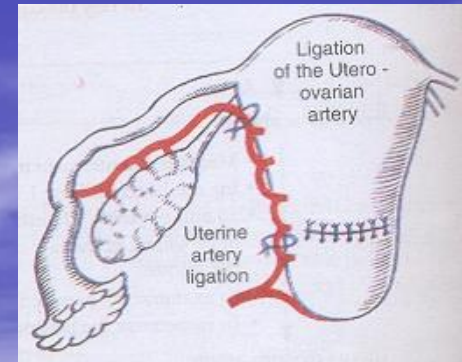
- *Uterine artery ligation* –

Bilateral ligation of the uterine arteries along with the veins (O' Leary's stitch) can be very effective in most cases.

- *Ovarian artery ligation* –

Could be combined with the uterine artery ligation.

- *Intraoperative fist compression of aorta*



COMPRESSION SUTURES

QUICK, safe and effective

- B-Lynch
- Horizontal full thickness sutures
- Vertical full thickness sutures
- Square sutures
- Combination of sutures

Save a mother from PPH

Don't forget the Critical steps

Communicate

Resuscitate

Investigate

Initiate (drug therapy)

Ligate (internal iliac)



Balancing Decisions

- The most important decision here is

when



to reinforce the medical management with surgical management to save the life of the mother !!!!

And you never know how close you are
it may be near when it seems
so far.....
so stick to the task when you are the
hardest hit
its when things get worst that you **mustn't**
quit !

