



Hayman compression suture technique in the management of atonic postpartum hemorrhage, from 1, January to December 31, 2022 at NMCHC

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I.Introduction

- Postpartum hemorrhage is the most cause of maternal morbidity and mortality in the world .
- It is defined as blood loss estimated in more than 500mL in the first 24 hours after vaginal delivery, and greater than 1000mL after a cesarean section.
- Postpartum hemorrhage (PPH) occurs in 2 to 4% of deliveries and in 6 to 7% of cesarean sections.
- It has been calculated that 140,000 women worldwide die every year, due to causes associated with PPH.
- The causes of PPH have been simplified with the "4T" mnemonic , looking for an easy way to remember them

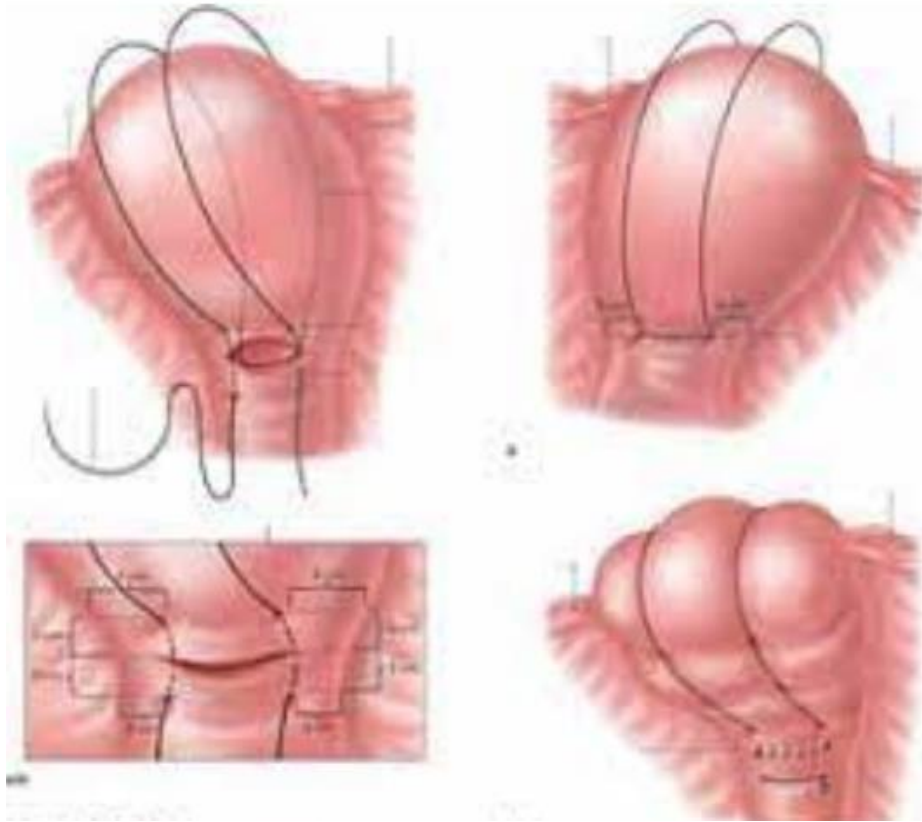
Mnemonics of «4T» of causes of postpartum obstetric hemorrhage

features		
T1	Tone	Atony or uterine inertia
T2	Trauma	Uterine trauma(rupture and uterine inversion), vagina and cervix tears
T3	Tissue	Retention of placenta and clots and abnormal placenta
T4	Trombine	Congenital or acquired coagulopathies

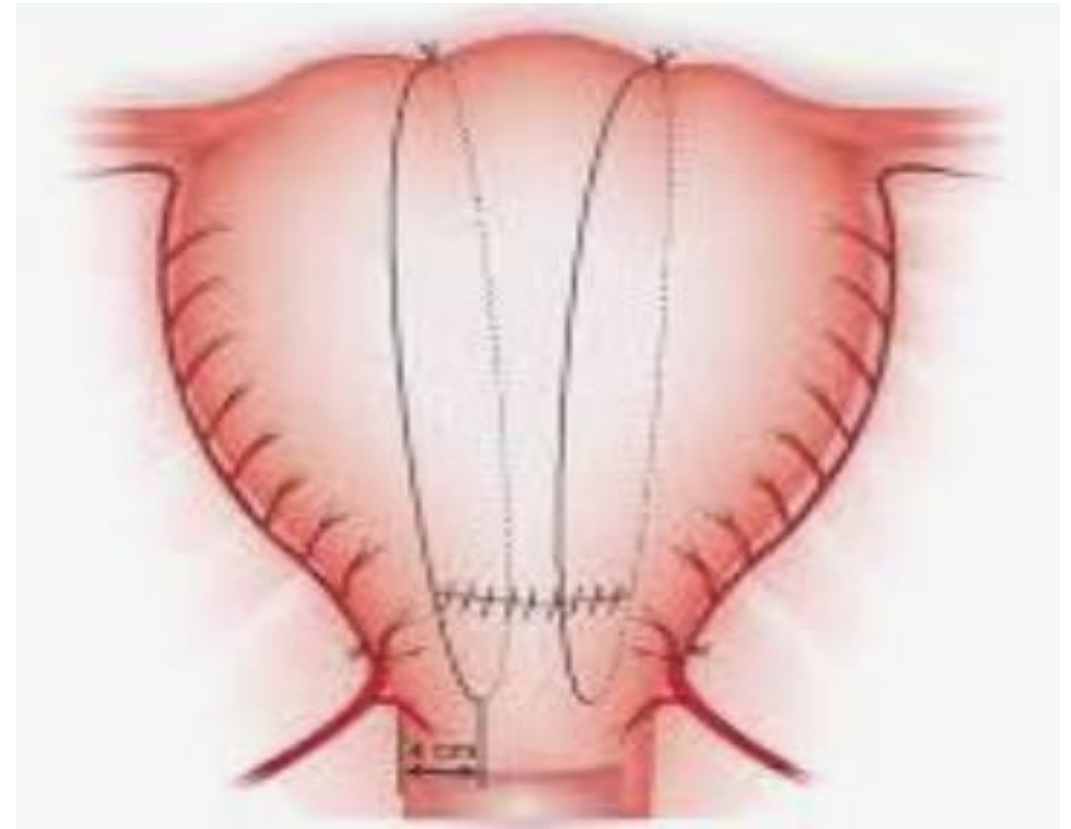
- Multiple risk factors for PPH have been identified:
chorioamnionitis, multiple pregnancies, prepartum hemorrhage,
fetal macrosomia, maternal obesity, preeclampsia, maternal
anemia, primigravidae and extended labor
- The sign of PPH :
 - . Uncontrolled bleeding
 - . Decreased blood pressure (dizziness, blurred vision or
feeling faint)
 - . Increased heart rate
 - . Decrease in the red blood cell count (hematocrit)
- The diagnosis is established whenever hemorrhage generates a
hemodynamic involvement during the postpartum .

- The treatment of PPH involves finding and ceasing the cause as soon as possible .
- Management includes medical (oxytocin, ergot alkaloids, prostaglandins, tranexamic acid, etc.) and non-medical (manual massage, selective arterial embolization, arterial ligation, uterine tamponade, uterine compression sutures and hysterectomy).
- The uterine compression sutures, for the control of PPH, are useful in bleeding from uterine atony cannot be controlled, and there is the desire to preserve the reproductive capacity.

- Dr. Christopher B-Lynch was the first one to successfully describe this method, later the modifications were made to the Hayman uterine compression sutures
- Hayman's compression sutures are a simplified approach to the B-Lynch technique compression sutures, it includes slight modifications .
- The advantages offered are the ease and speed of application, in addition to avoiding the need to perform a hysterectomy



B-Lynch suture



Hayman suture

II. Materials and Methods

- Descriptive study was carried out; the clinical histories and all the patients had Hayman's compressive sutures.
- The patients were treated from January 1, 2021 and December 31, 2022 in NMCH.
- We included women with postpartum hemorrhage (vaginal or cesarean section), who did not respond to medical treatment during the first 6 hours of puerperium.
- We excluded women whose deliveries with premature labor , a dead fetus or who did not have data in documents or incomplete documents

III. Results

- Participating population of 8606 deliveries in 1 years, 3437 (39.93%) were done by cesarean section.
- 280 /8606(3.25%) cases of PPH (caesarean section: 145 cases, 51.78% and delivery:135 cases, 48.21%).

	cases	%
caesarean section	145	51.78
delivery	135	48.21

- Among the main causes of PPH

	cases	%
retention of placenta	165	58.93
uterine atony	87	31.07
Traumatism (vagina and cervix tears)	28	10

- The risk factors found

	cases	%
multiparous	165	58.92
pre-eclampsia & hypertension	63	22.5
prolonged labor	45	16.07
multiple pregnancy	15	5.35

- Required surgical management

	cases	%
Hayman suture	74	85.05
Hayman suture + ligation of the uterine arteries	11	12.64
Hayman suture + ligation of the uterine arteries + hysterectomy	2	2.29

III. Discussion

- The main causes

Causes	Uterine atony	Retention of placenta	Tears (vagina, cervix)
NMCHC	47.14%	58.93%	10%
Nueva Gravada, Colombia,2019	78.16%	6.11%	14.84%
Villegas Aria, Mixico,2017	36.2%	12%	

-The risk factors found

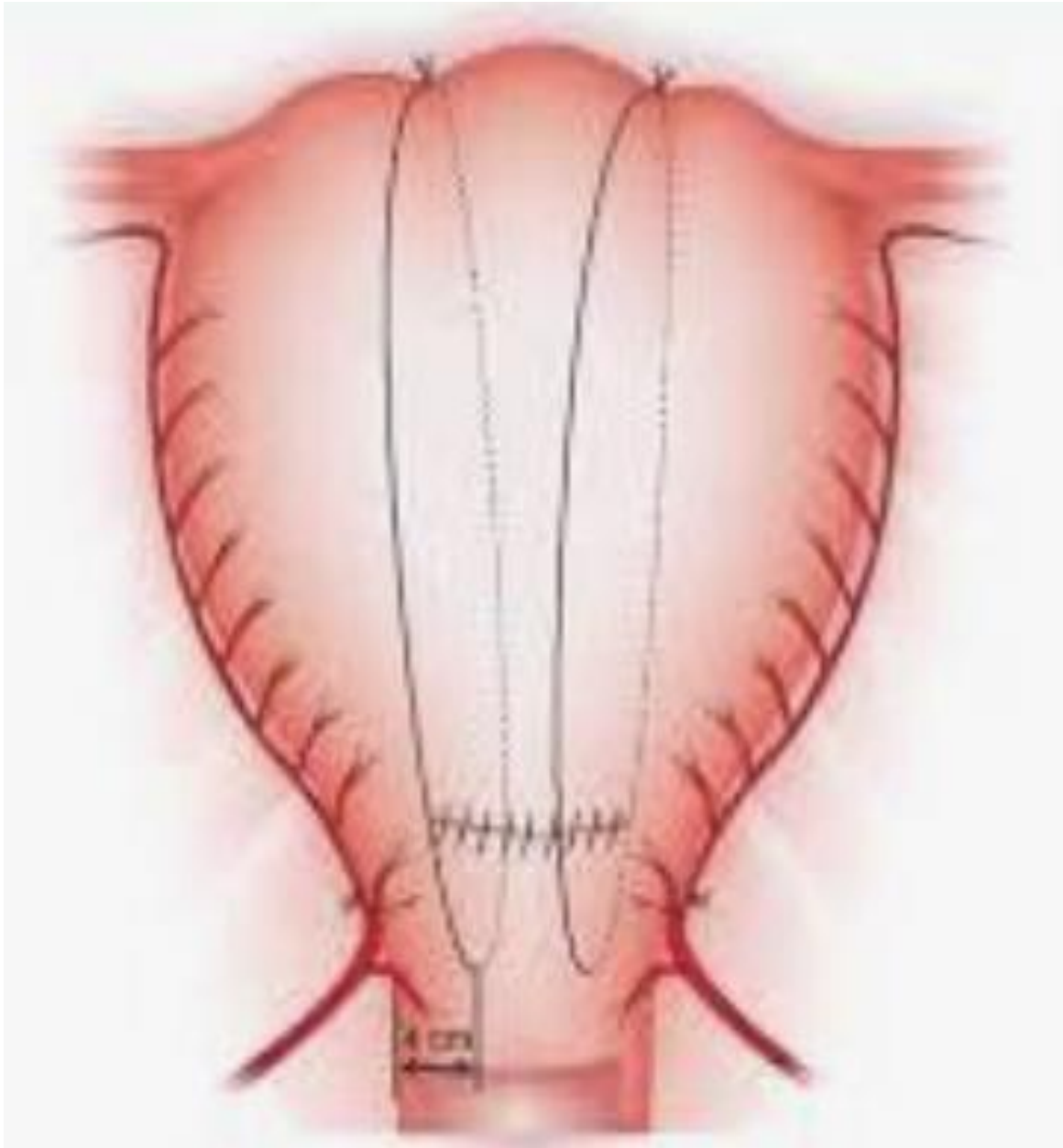
Risk factors	Multiparous	Preeclampsia	Prolonged labor
NMCHC	58.92%	22.5%	16.07%
Nueva Gravada, Colombia,2019	16.59%	17.46%	19.65%

-The Hayman suture

Hayman	NMCHC	Nueva Gravada, Colombia,2019	Aswan University Hospital, Egypt
Hayman suture	85.05%	86.81%	81.1%
Hayman suture + ligation of the uterine artery	12.64%	5.49%	18.9%
Hayman suture + ligation of the uterine artery + hysterectomy	2.29%	4.39%	

IV. Conclusion

- The Hayman technique are an adequate conservative uterine, effectiveness and conserving reproductive capacity.
- In the hands of surgeons without expertise, compressive sutures are safe, rapid, achieving satisfactory results with minimal or no complications.





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Thanks You

