# A SSUMMATIVE ASSESSMENT ONE YEAR USED THE MODIFIED DOUBLE BALLOON CATHETER FOR CERVICAL RIPENING IN INDUCTION LABOR: SUCCESS, ADVANTAGE AND DISADVANTAGES

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# 1. INTRODUCTION

- Artificial cervical ripening has become an integral part of the induction process in women whose cervices are initially unfavourable for induction.
- The Bishop score is the most commonly used method to rate the readiness of the cervix for induction of labor. If Bishop score less than 6 points, the doctor have to use the drugs or the mechanical methods to ripen the cervix.
- The first time, the balloon catheter insert the cevical cannal for ripening cervix in 1967, in 1991 the double balloon catheter is used ( Cook balloon, Atad balloon)

# 1. INTRODUCTION

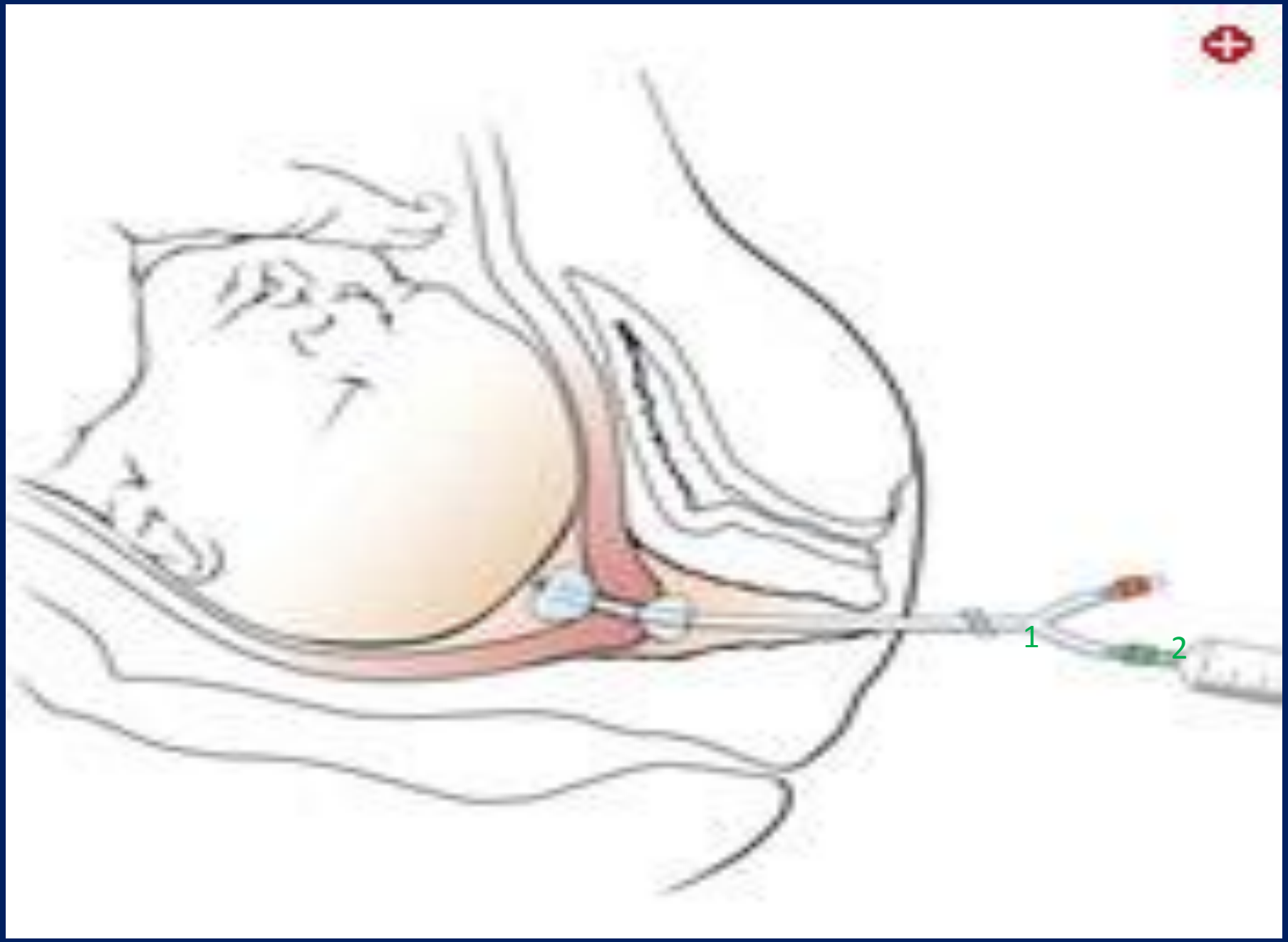
- From 2014, because the pharmacologic ripening agents such as exogenous PGs haven”t been used, the National hospital of Obstet and Gynecology has devised a improved double balloon catheter liked invention of Atad for ripening cervix in induction and obtained high success.
- Overtime used this method, we ricognise its high applicability, inexpensive and has little complications for the women and infant. So we review the relevant literature discussing this method of induction focusing on its effectiveness, sim- plicity, safety and efficacy, low cost and any associ- ated serious side effects .

## 2. **MATERIALS AND METHODS**

- The sudy is performed on 120 patients at the Department of birth from January 2015 until December 2015 with following criterias:
  - A singleton gestation,
  - Vertexpresentation,
  - Bishop score less than 6.
  - Intact membranes.
  - Gestational age > = 37 weeks,
  - Reassuring fetal heart tracing on admission.
  - Not infect the vaginal area.
- The following are contraindications : women haven't got one of those criterias and women haven't got indication for the vaginal birth: malpresenting part….

PROCEDURE:

- Cleanse th vulvo – vaginal area.
- Insert the cervical ripening balloon through the cervix until both balloons have entered the cervical canal, inflated the uterine balloon with 80 ml saline then pulled back against the internal os, following the vaginal balloon was inflated with 80 ml of saline.
- The balloon catheter was removed either following self – expulsion or after 12h of insertion.
- Vaginal examination of the cervix was performed at the time of catheter removal.
- Oxytocin was administered per protocol to all patients who did not have enough contractions.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PROCEDURE:

- After studying, answerd these questions:

1. The success rate of the method ( Cervix is dilated >= 3 cm after remove the device)
2. The rate of vaginal birth and the rate of cesarean birth?
3. Change the cervical bishop score after removed the device.
4. The percentage of women with oxytocin added in the labor and the percentage of epidural anesthesia.
5. The hazards to the mother and fetus: infection, rupture membranes, bleed the cervix and vaginal, cervical tear, uterine rupture, respiratory failure….

# RESULTS AND DISCUSSION

| Characteristic | | N | % |
|---|---|---|---|
| Maternal age(yrs) | < 35 | 94 | 78 |
| | > 35 | 26 | 22 |
| Parity | Nulliparous | 95 | 79,16 |
| | Multiparous | 25 | 20,84 |
| Gestational age | 36 w 1/7 day – 37 w0/7 day | 8 | 6,7 |
| | 38 w - 40 w 0/7 day | 27 | 22,5 |
| | >= 41 week | 85 | 70,8 |
| Indication for induction | Postterm pregnancy | 85 | 70,8 |
| | Hypertensive disorders, preeclampsia | 7 | 5,8 |
| | Gestational diabetes | 6 | 5 |
| | oligohydramnios | 12 | 10 |
| | Intrauterine growth restriction | 8 | 6,6 |
| | other | 2 | 1,8 |
| | | | |

# RESULTS AND DISCUSSION

Table 2: Cervical ripening outcomes

| **Result** | **N** | **%** |
|---|---|---|
| Successful ripening ( cervix dilate > = 3 cm) | 108 | 90 |
| Unsuccessful ripening ( cervix dilate < 3 cm) | 12 | 10 |
| Total | 120 | 100 |

- Mei – Dan và Cs: rate of successful 99 %
- Jack Atad và CS: rate of successful 94 %
- Antonella Cromi và CS: rate of successful 91,4 %

# RESULTS AND DISCUSSION

## Table 3: Change cervical Bishop score before and after insert divices

| Parity<br>Bishop score | Nulliparous | multiparous |
|---|---|---|
| Before insert | 2 (0 -5 ) | 3 (0 – 5) |
| After remove | 7 (5 – 10 ) | 7 ( 5 – 10 ) |
| Change Bishop score | 5 (5 – 10) | 5 ( 5 – 10 ) |

- Jack Atad: at least 2, the tallest 6 points. After remove: 10,3 ± 3,3
- Cromi và cs: change of Bishop score is 3 points
- CE Pennel và cs: change of bishop score is 3-4 points

# Talbe 4: labor outcomes

| characteristic | | N | Tỷ lệ % |
|---|---|---|---|
| Mode of deliver in successful cervical ripening group (CTC dilate > = 3 cm) | Vaginal - overall | 81/108 | 75 |
| | Assisted vaginal delivery | 7/108 | 7 |
| | Cesarean section | 20/108 | 18 |
| Mode of the deliver in unsuccessful cervical ripening group ( CTC < 3cm and was administered oxytocin ) | Vaginal - overall | 4/12 | 33,3 |
| | Assisted vaginal delivery | 2/12 | 16,7 |
| | Cesarean section | 6/12 | 50 |
| Delivery within 24h | Vaginal(overall – Assisted) | 94/120 | 78,3 |
| | Cesarean section | 26/120 | 21,7 |
| Oxytocin administrition n(%) | | 112/120 | 93,3 |
| Epidural rate n (%) | | 98/120 | 816 |
| Time to onset of active labor (h,p) | | 9,7 ± 3,4 | |
| Time from insert divice to delivery ( h,p) | | 18,8 ± 5,4 | |

# RESULTS AND DISCUSSION

## Table 5. patient and neonatal outcomes

| **Characteristic** | | |
|---|---|---|
| Infant | Birth weight (g) | 3260 ± 580 |
| | Birth weight > 4000g ( n) | 5 (4,2 %) |
| | 5-min Apgar score < 7 | 1 |
| Women | Hemorrhage after delivery | 0 |
| | Tear vagina and cervix | 1 |
| | Infection in labor | 0 |
| | Infection after delivery | 1 |
| | Rupture uterine | 0 |
| | Tachysystole contraction | 0 |

# RESULTS AND DISCUSSION

Table 6. Compare the improved effectiveness of the improved devices and the original devices

| Author | year | devices | Successful ripening cervix (%) | Vaginal birth (%) |
|---|---|---|---|---|
| Jack Atad | 1997 | Cook | 94 | 86,7 |
| Eled Mei – Dan | 2011 | Cook | 99 | 80 |
| Antonella- Cromi | 2012 | Cook | 91,4 | 68,8 |
| Lê Thiện Thái<br>Đoàn T Phương Lam | 2015 | improved Cook | 90 | 78,3 |

# CONCLUSION

- Using the improved double balloon catheter for cervical ripening reached high success rate 90 % and vaginal birth within 24 hours was 78,3 %, and hardly cause complication for women and fetus.

- The current, beccause of economy, drugs, other techniques may not be considered sufficient, this improved method is the best to help pregnancy women have chance vaginal birth without cesarean section.

# PROPOSE

- Continues the research and evaluated the effective of this method in the process used.

- Popularity thí process, techniques to the other obstetrics department where have the operated room.


THANK YOU