



មជ្ឈមណ្ឌលជាតិគាំពារមាតា និងទារក
National Maternal and Child Health Center

ទិវាសល្យសាស្ត្រ សម្ព័ន្ធ និងរោគស្រ្តី លើកទី៤

ប្រធានបទ៖ «រួមគ្នាបង្កើនគុណភាពសេវាព្យាបាល ថែទាំ និងសង្គ្រោះមាតា និងទារក »

Management of Cesarean scar pregnancy



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Presented by Dr. SY Sodavy OBGYN

ថ្ងៃទី២-៣ ខែកញ្ញា ឆ្នាំ២០២៦
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I. Introduction

A/- Over view

- Cesarean scar pregnancy (CSP) is a pregnancy that implanted on or in a scar from a prior cesarean birth.
- If unrecognized or inadequately managed, CSPS can lead to severe fetal and maternal morbidity (eg, uterine rupture, hemorrhage) and mortality.
- CSPS is likely a precursor to and shares common histology with placenta accreta spectrum (PAS).
- The incidence: 1 /1800 pregnancies.
- 1/3 of patients with CSPS are asymptomatic at the time of ultrasound (TVUS) diagnosis. Vaginal bleeding with or without abdominal/pelvic pain usually presents in the late first or early second trimester.

I. Introduction

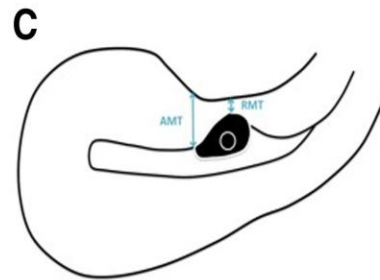
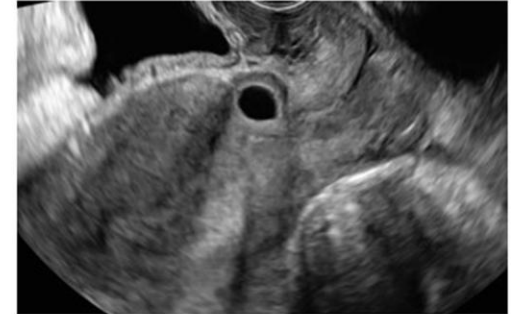
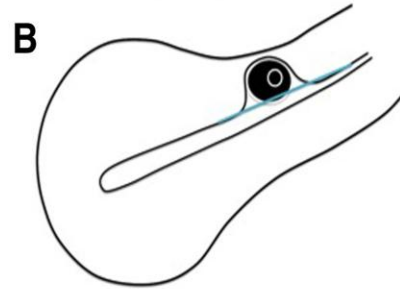
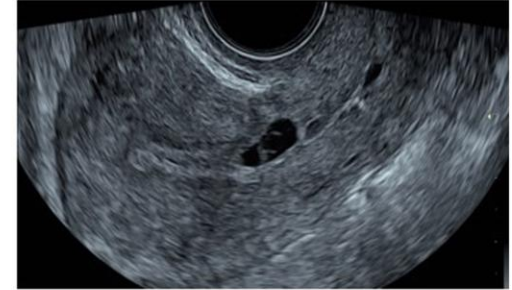
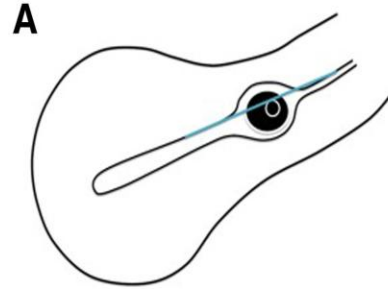
B/- Classification

- There are two main types of CSPs:
 - "On-the-scar" (type 1) – Implantation of the CSP on the well-healed scar of a previous cesarean birth ("endogenous" implantation).
 - "In-the-niche" (type 2) – Implantation of the CSP within the defect or "niche" of an incompletely healed scar ("niche pregnancy," or "exogenous" implantation).

CLASSIFICATION CSP REGISTRY by Kaelin A, et al. 2024

➤ 2 types of CSP:

- Type 1 if $> 50\%$ of GS protruded toward the uterine cavity or cervical canal
- Type 2 if placenta implanted into a deficient or dehiscent scar and the protrusion of the GS $\leq 50\%$



CLINICAL CLASSIFICATION SYSTEM by Ban Y, et al 2023

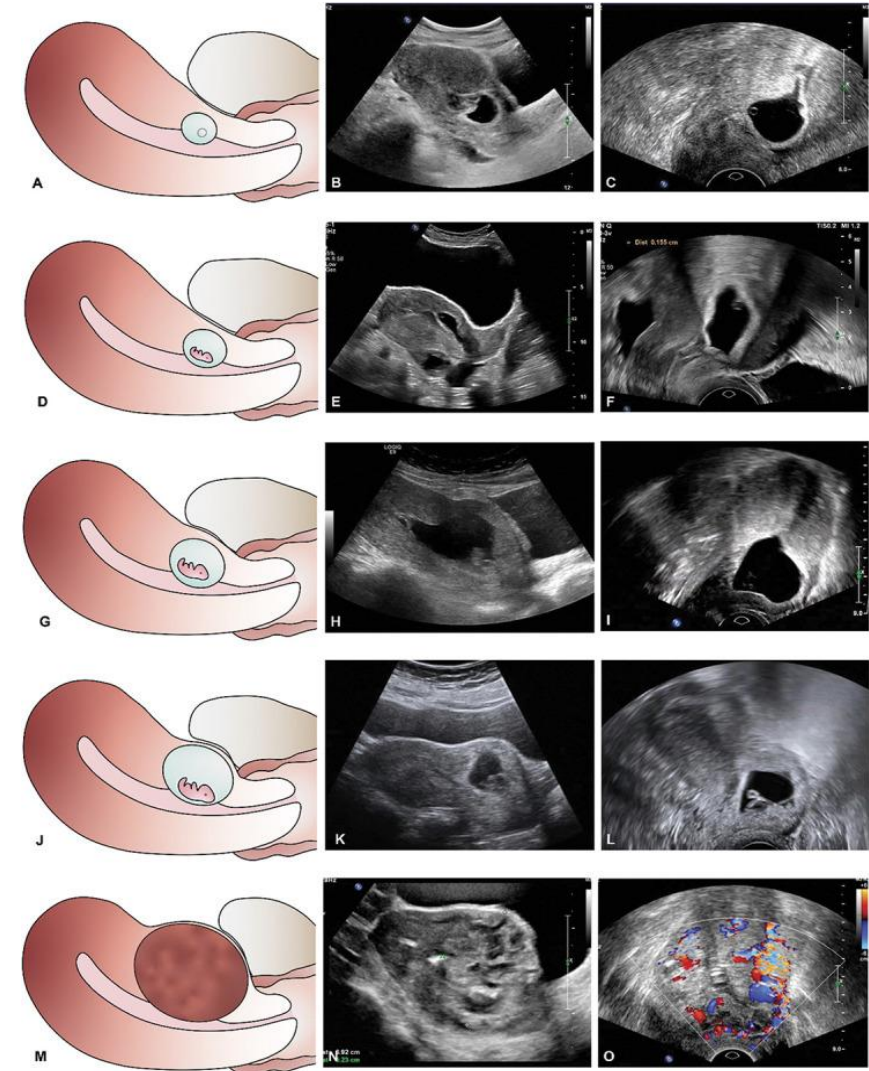
Type I : Implantation of a gestational sac within the cesarean scar, with AMT > 3 mm regardless of the size of the GS.

Type IIa : AMT between 1 and 3 mm and average diameter of the GS or mass ≤ 30 mm.

Type IIb : AMT between 1 and 3 mm and average diameter of the GS or mass > 30 mm.

Type IIIa : GS bulges out under the cesarean scar, with AMT ≤ 1 mm and average diameter of the GS and mass ≤ 50 mm.

Type IIIb : AMT ≤ 1 mm and average diameter of the GS or mass > 50 mm.



I.Introduction

C/. Management Option:

1.Medical Management:

- Systemic methotrexate (MTX)
- Local injection (Embryodal)

2.Surgical Management

- Ultrasound-guided suction aspiration
- Hysteroscopic Resection
- Operative resection (wedge resection): Laparoscopic, laparotomy, transvaginal
- Resection
- Gravid hysterectomy
- High-Intensity focused Ultrasound plus suction curettage

I.Introduction

3. Minimal Invasive procedure

- Intrauterine Ballon Tamponade: transcervical balloon catheter
- Uterine Artery embolization (UAE)

II. Objectives:

- Describe disease behaviors or pattern
- Management of the first trimester CSP
- Propose the recommendations

Main objectives of Management:

- Termination of pregnancy

III. Method and material

Inclusive criteria:

- Gestational age ≤ 14 weeks
- History of previous cesarean section at least 1 time.
- Cesarean scar ectopic pregnancies diagnosis by ultrasound.

Exclusive criteria:

- Gestational age > 14 weeks
- Heterotopic pregnancy
- Cesarean scar ectopic pregnancy with insufficient diagnosis by first ultrasound.

III. Method and material

Study method: Retrospective study

Site of study: Gynecology-maternity department of National Maternal and Child Health (NMCHC), Phnom Penh, Cambodia

Sample size and period of study: 31 patients diagnosed for CSP, from January 1st to December 31st 2025

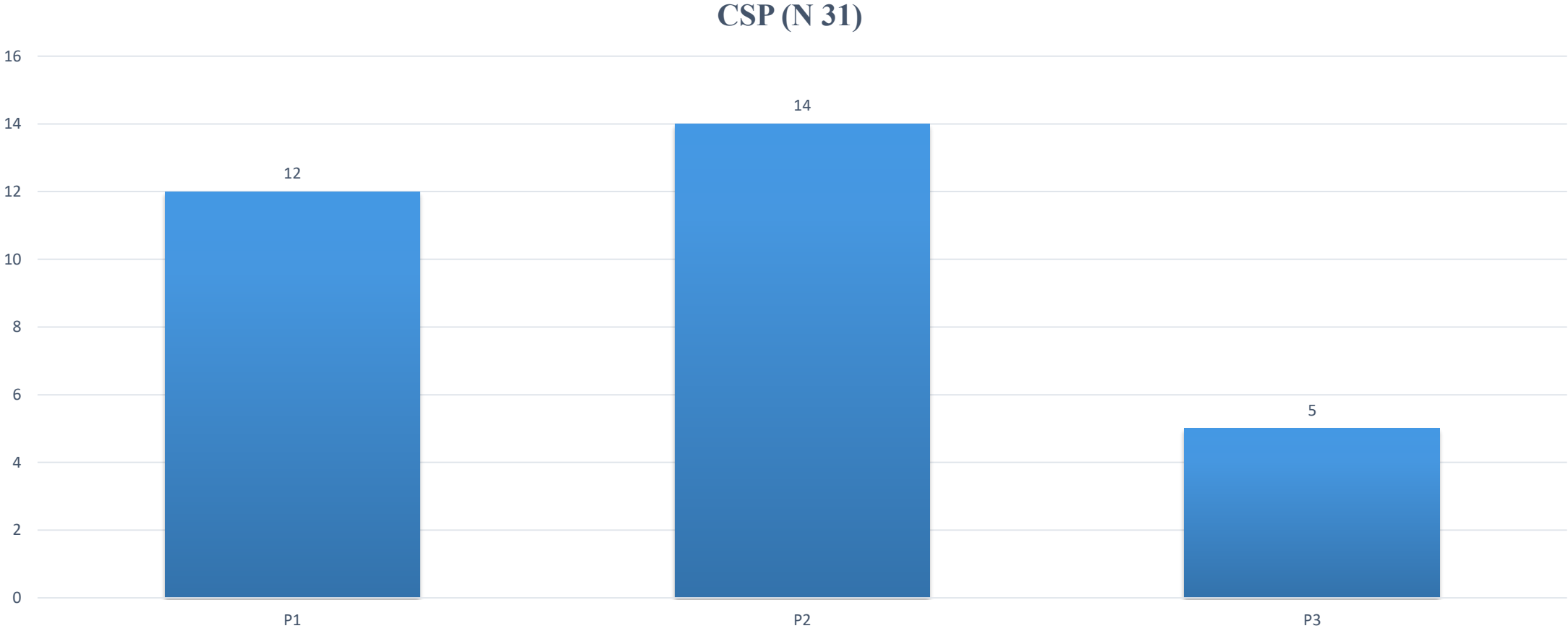
IV. Results

- 11622 deliveries at NMCHC in 2025
- 30569 ANC at NMCHC in 2025
- 31 hospitalized for CSP management in first trimester (< 14 weeks)
- Incidence of CSP is 1/986 pregnancies.
- Average age : 32,7 years old (22-46).

IV.1. ADMISSION TYPE

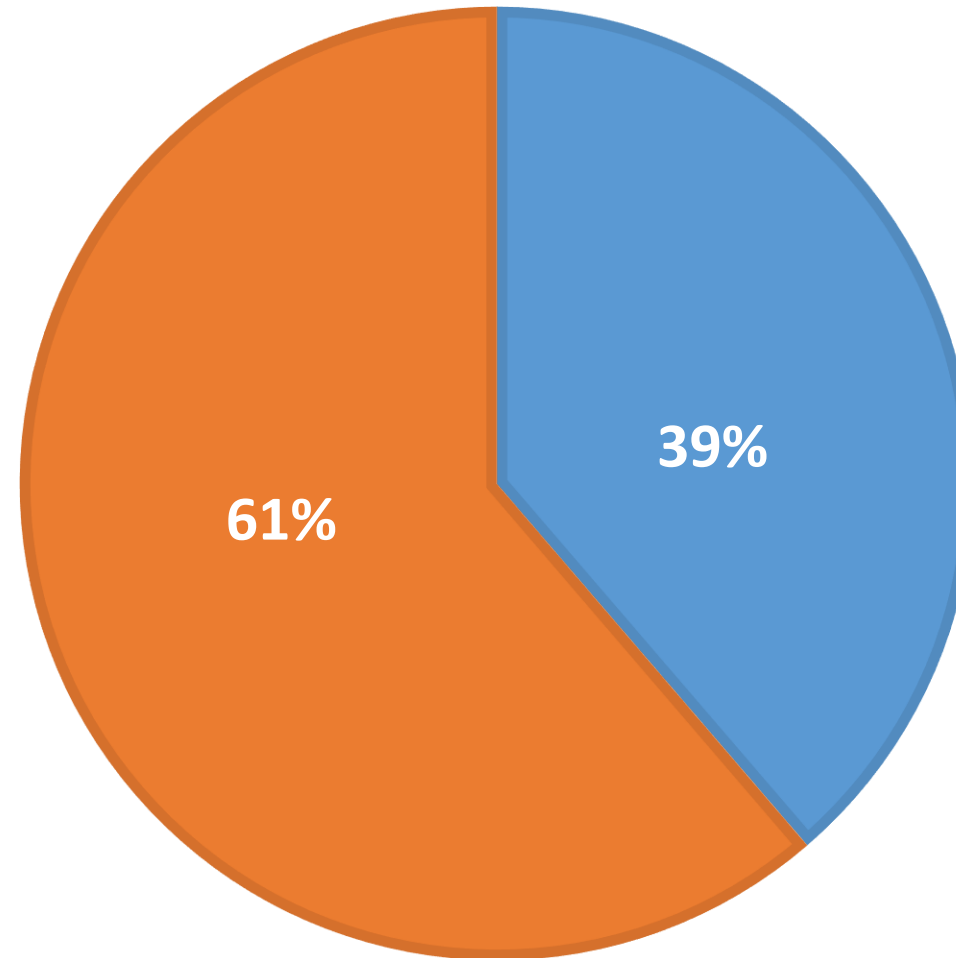
Admission type	CSP (N 31)
Admission	30
Refer	1
TOTAL	31

IV.2. PARITY



IV.3. PREVIOUS CESAREAN SECTION

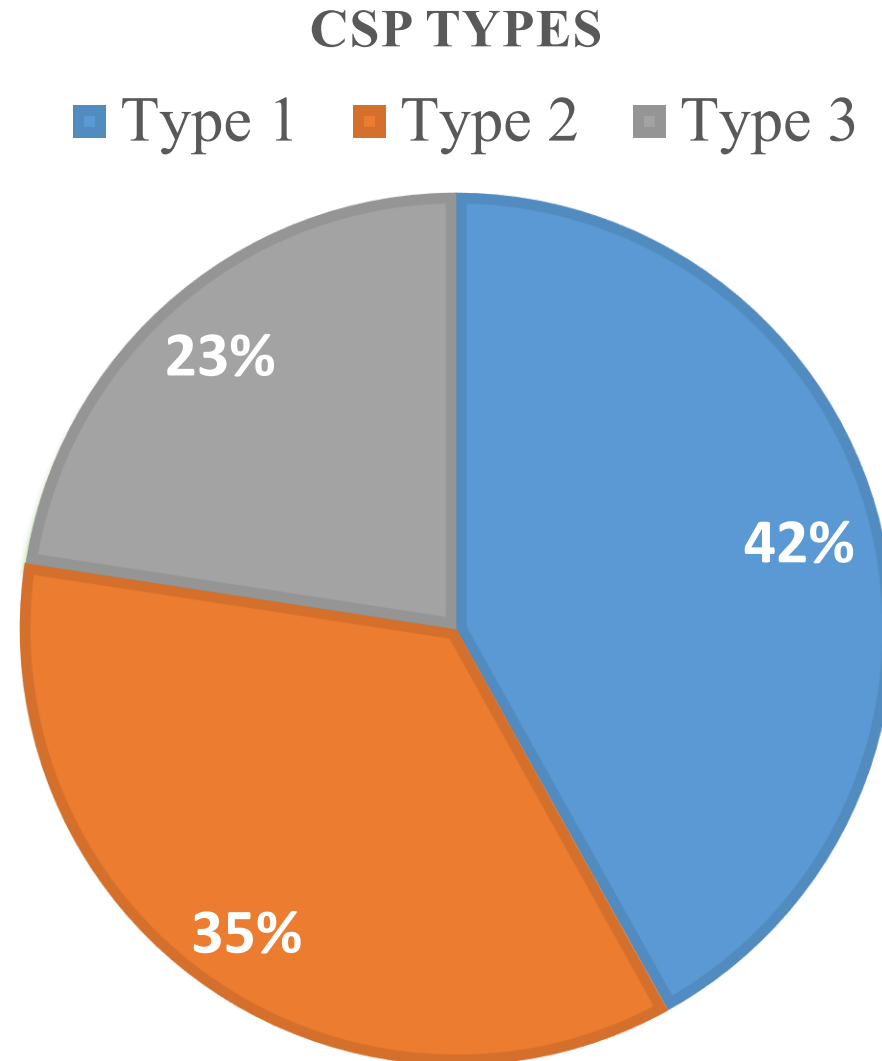
■ One Prior C-section ■ Two Prior C-section



IV.4. CLINICAL PRESENTATION

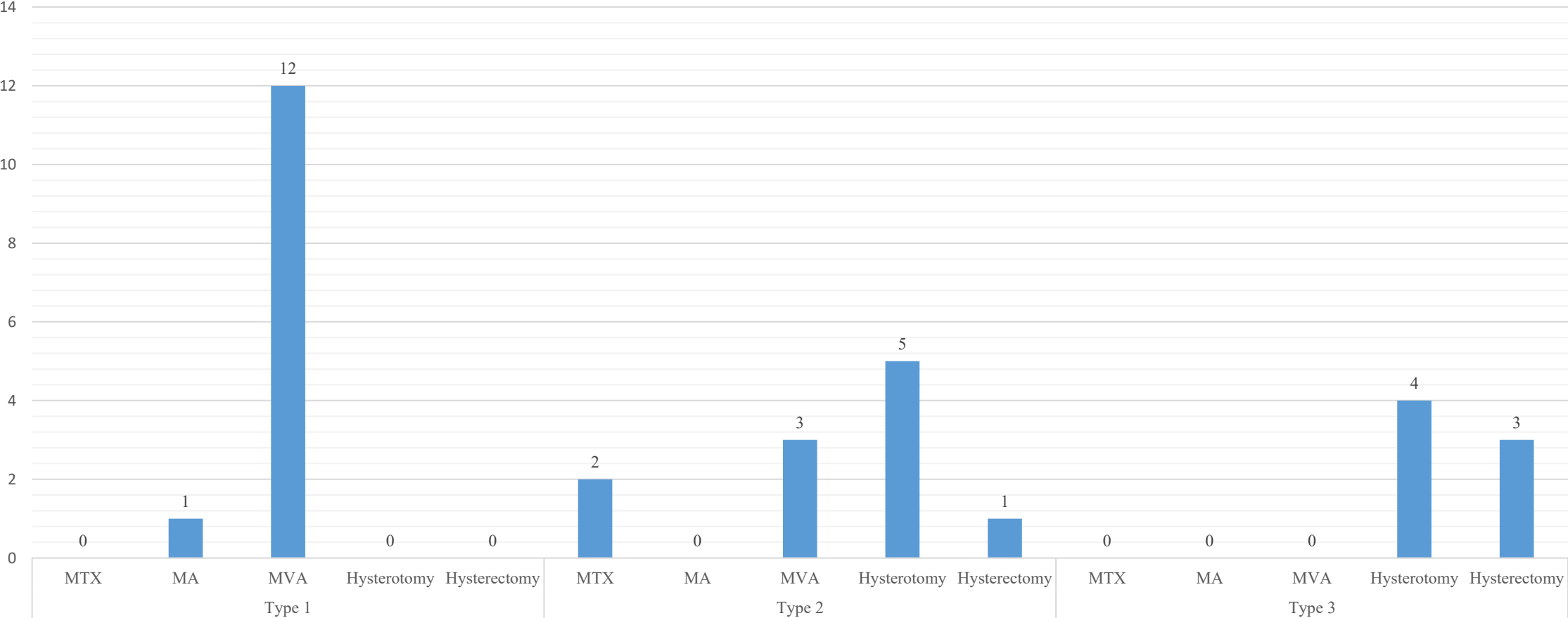
Clinical presentation	CSP (N 31)
Vaginal bleeding	14
Pelvic pain	2
Vaginal bleeding and pelvic pain	4
Asymptomatic	11
TOTAL	31

IV.5. TYPES OF CSP BY ULTRASOUND



IV.6. MANAGEMENT

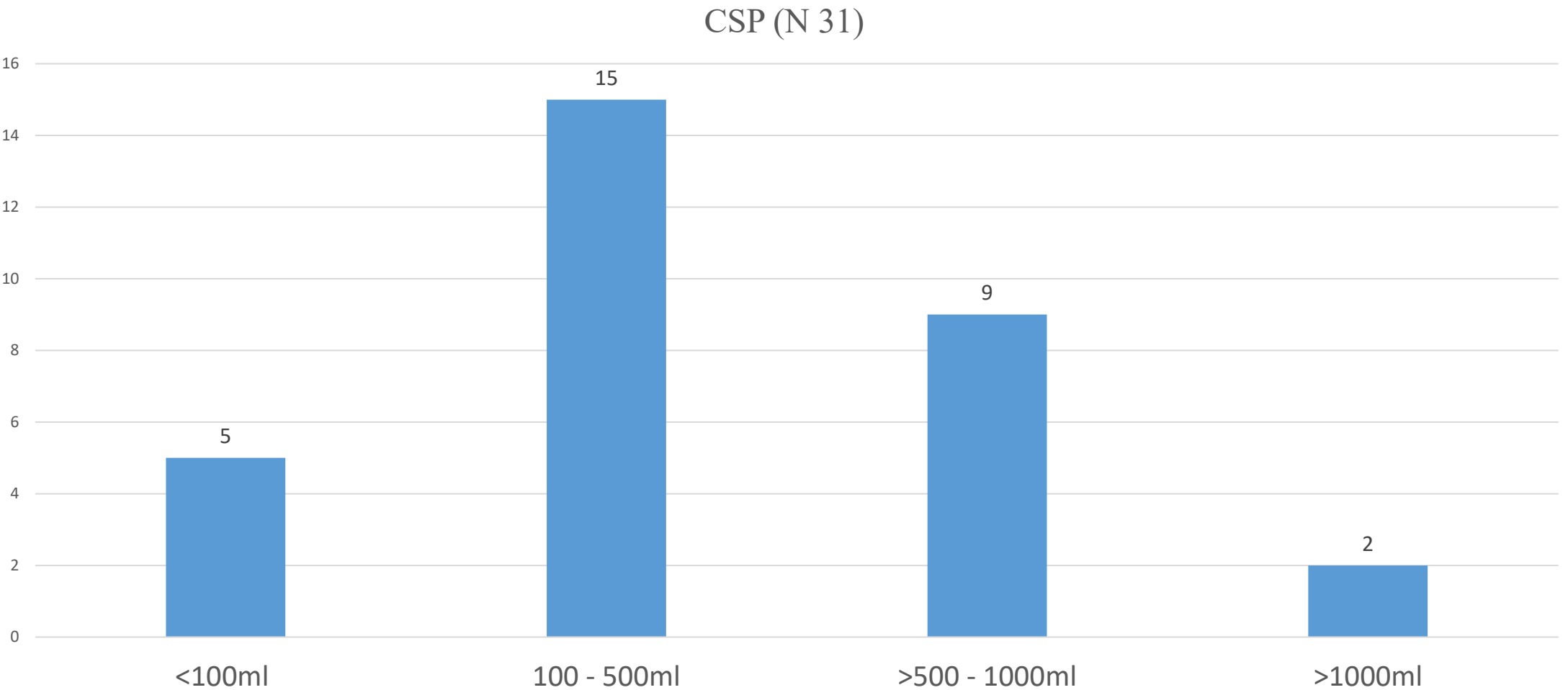
CSP (N 31)



IV.7. SURGICAL MANAGEMENT

SURGICAL MANAGEMENT	CSP (N 31)
Program	19
Emergency	9
Non-surgical treatment	3
TOTAL	31

IV.8. BLOOD LOSS



IV.9 MORBIDITY

Morbidity	CSP (N 31)
Hysterectomy	N= 4 (12.9%)

V. DISCUSSION INCIDENCE

STUDY	COUNTRY	INCIDENCE
Our study	NMCHC (Cambodia, 2025)	1/986 pregnancies
Dr. HOR LAT SORIYA	NMCHC (Cambodia, 2024)	1/993 pregnancies
Jurkovic D. et al,	United Kingdom (2003)	1/1800 pregnancies

V. DISCUSSION GESTATIONAL AGE

STUDY	COUNTRY	MEAN GESTATIONAL AGE
Our study	NMCHC (Cambodia, 2025)	8.4 weeks
Dr. HOR LAT SORIYA	NMCHC (Cambodia, 2024)	9 weeks
Ko JK. et al,	Hong Kong, china(2014)	6.7 weeks

V. DISCUSSION CLINICAL SIGNS

CLINICAL SIGNS	Our study	Dr Hor Lat Soriya	Ko JK. et al,
	NMCHC (Cambodia, 2025)	NMCHC (Cambodia, 2024)	Hong Kong, China, 2014
Vaginal bleeding	45.16%	45.83%	86.4%
Pelvic pain	6.45%	16.66%	4.5%
Vaginal bleeding and pelvic pain	12.9%	12.5%	9.1%
Asymptomatic	35.48%	25%	-

V. DISCUSSION OF PREVIOUS C-SECTION

Study	Country	One prior c-section	Two prior c-section
Our study	NMCHC (Cambodia, 2025)	39%	61%
Dr HOR LAT SORIYA	NMCHC (Cambodia, 2024)	46%	54%
Ko JK. Et al,	Hong Kong, China (2014)	28%	72%

V. DISCUSSION TYPE OF CSP

Study	Country	TYPE 1	TYPE 2	TYPE 3
Our study	NMCHC (Cambodia, 2025)	42%	35%	23%
Dr HOR LAT SORIYA	NMCHC (Cambodia, 2024)	25%	37.5%	37.5%
Hou S. et al,	China (2023)	22.4%	64.1%	13.5%

V. DISCUSSION FIRST-LINE MANAGEMENT

Study	Country	MEDICAL	SURGICAL
Our study	NMCHC (Cambodia, 2025)	9.61%	90.32%
Dr. HOR LAT SORIYA	NMCHC (Cambodia, 2024)	8%	92%
Kadin A. et al,	CSP Registry (2024)	26.7%	58.7%

V. DISCUSSION on HYSTERECTOMY

Study	Country	HYSTERECTOMY
Our study	NMCHC (Cambodia, 2025)	12.9%
Dr HOR LAT SORIYA	NMCHC (Cambodia, 2024)	50%
Kadin A. et al,	CSP Registry (2024)	4.34%

VI. CONCLUSION (1)

- In 2025, we diagnosed 31 cases of CSP up to 14 weeks, 1/986 pregnancies.
- 45.16% present vaginal bleeding
- More than 60% of patients were managed with planned interventions.
- No maternal mortality.
- Operative management (Hysterotomy/hysterectomy) for emergency cases is effective.

VI. CONCLUSION (2)

- Type 1 CSP, ultrasound-guided suction aspiration is effective, quick and easy.
- For type 2 and 3 CSP, hysterotomy or hysterectomy is effective.
- Further study is needed to evaluate the management's efficacy.

VII. RECOMMENDATIONS (1)

- CSP is an uncommon but potentially life-threatening condition.
- TVUS is the early diagnosis with most effective.
- Informed patient of the risk of pregnancy continuation.
- Management according to classification of CSP.
- Bilateral ligation of uterine artery should be performed prior to hysterotomy.

VII. RECOMMENDATIONS (2)

- Surgical repair uterine scar defects with single or double-layer closure.
- Require Multidisciplinary Teams including OBGYNs, anesthesiologist, radiologists and blood bank services are available.
- As **C-section** rates rise, **CSP** incidence increases; therefore, avoid **unnecessary** deliveries by cesarean.
- Contraception and warrant monitoring or even surgical repair before the next pregnancy.

VIII. REFERENCES

1. Society for Maternal-Fetal Medicine (SMFM); Miller R, Gyamfi-Bannerman C; Publications Committee. Electronic address: pubs@smfm.org. Society for Maternal-Fetal Medicine Consult Series #63: Cesarean scar ectopic pregnancy. *Am J Obstet Gynecol*. 2022 Sep;227(3):B9-B20. doi: 10.1016/j.ajog.2022.06.024. Epub 2022 Jul 16. PMID: 35850938.
2. Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R, Elson CJ. First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Cesarean section scar. *Ultrasound Obstet Gynecol*. 2003 Mar;21(3):220-7. doi: 10.1002/uog.56. PMID: 12666214.
3. Gonzalez N, Tulandi T. Cesarean Scar Pregnancy: A Systematic Review. *J Minim Invasive Gynecol*. 2017 JulAug;24(5):731-738. doi: 10.1016/j.jmig.2017.02.020. Epub 2017 Mar 6. PMID: 28268103.
4. Kaelin Agten A, Cali G, Monteagudo A, Oviedo J, Ramos J, Timor-Tritsch I. The clinical outcome of cesarean scar pregnancies implanted "on the scar" versus "in the niche". *Am J Obstet Gynecol*. 2017 May;216(5):510.e1-510.e6. doi: 10.1016/j.ajog.2017.01.019. Epub 2017 Jan 20. PMID: 28115056.
5. Jordans IPM, Verberkt C, De Leeuw RA, Bilardo CM, Van Den Bosch T, Bourne T, Brölmann HAM, Dueholm M, Hehenkamp WJK, Jastrow N, Jurkovic D, Kaelin Agten A, Mashiach R, Naji O, Pajkrt E, Timmerman D, Vikhareva O, Van Der Voet LF, Huirne JAF. Definition and sonographic reporting system for Cesarean scar pregnancy in early gestation: modified Delphi method. *Ultrasound Obstet Gynecol*. 2022 Apr;59(4):437-449. doi: 10.1002/uog.24815. PMID: 34779085; PMCID: PMC9322566.

VIII. REFERENCES

7. Kaelin Agten A, Jurkovic D, Timor-Tritsch I, et al. First-trimester cesarean scar pregnancy: a comparative analysis of treatment options from the international registry. *Am J Obstet Gynecol* 2024;230:669.e1-19.
8. Ban Y, Shen J, Wang X, Zhang T, Lu X, Qu W, Hao Y, Mao Z, Li S, Tao G, Wang F, Zhao Y, Zhang X, Zhang Y, Zhang G, Cui B. Cesarean Scar Ectopic Pregnancy Clinical Classification System With Recommended Surgical Strategy. *Obstet Gynecol*. 2023 May 1;141(5):927-936. doi: 10.1097/AOG.0000000000005113. Epub 2023 Apr 5. PMID: 37023450; PMCID: PMC10108840.
9. Suxia Huo, Liang Shen, Ying Ju, Keke Liu & Wei Liu (2023) Treatments for cesarean scar pregnancy: 11-year experience at a medical center, *The Journal of Maternal-Fetal & Neonatal Medicine*, 36:1, DOI: 10.1080/14767058.2022.2162818
10. Cesarean scar pregnancy: a systematic review of treatment studies. Birch Petersen, Kathrine et al. *Fertility and Sterility*, Volume 105, Issue 4, 958 - 967

Thank You