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EVALUATION OF CLINICAL OUTCOMES AND ACCEPTABILITY OF AN ANATOMICAL CLASSIFICATION FOR PLACENTA ACCRETA SPECTRUM, A MULTICENTRIC PROSPECTIVE COHORT STUDY

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INTRODUCTION

The incidence of placenta accreta spectrum (PAS) has hiked up, directly proportional to the increased frequency of cesarean section (1). As the name implies, the condition includes a spectrum of various clinical presentations, from "mild" forms, which if managed by expert groups can have intraoperative risks similar to cesarean section; to very severe forms that can lead to death and require both great surgical skill and the use of multiple healthcare resources (2).

The classification of PAS adopted by the International Federation of Gynecologists (FIGO) is based on the degree of penetration of the placenta into the myometrium. Therefore, its histologic staging is only possible by analyzing a tissue sample after surgery and does not contribute to surgical decisions. In addition, histological analysis is seldom available in center with limited resources (3).

Among the characteristics expected to be found in a classification applied for a disease that is managed surgically, its application prior to surgery (based on imaging studies) and its confirmation during laparotomy, are ideal. Additionally, such a classification should make it easier to choose the treatment option and correlate with the clinical results or the degree of surgical difficulty. An interesting proposal for PAS is the topographic classification created by Palacios - Jaraquemada et al (1), with 5 differentiated categories based on the part of the uterus affected and the possibility of separating or not the uterus from the bladder. This classification has been studied and successfully implemented by hospitals in low- and middle-income countries, and retrospective studies have been carried out describing its correlation with clinical results and the usefulness of one or another surgical technique (1,4). Currently there are no prospective multicentric studies that address the relationship between this anatomical classification with clinical variables, and no study has reviewed the opinions of the professionals who use it.

We propose the execution of a prospective multicentric study consisting of a cohort of patients with prenatal or intraoperative diagnosis of PAS, evaluating the clinical outcomes of the group of patients found in each category of the topographic classification. In addition, an approach to evaluate the acceptability of this classification among the obstetrician-gynecologists of the participating medical centers will be included.

THEORETICAL FRAMEWORK

Definition

Traditionally, PAS has been considered to be due to an abnormal insertion of the placenta, when the chorionic villi abnormally invade the myometrium (5). However, recent publications emphasize the non-invasive nature of placentation in PAS. The fundamental problem is the presence of an established myometrial defect in the uterus prior to pregnancy, clearly linked to previous surgical trauma, been history of cesarean section the main risk factor. When the placenta implants over that defect, as is the case of placenta previa in women with a history of cesarean section, abnormal migration of the placenta to deeper than usual planes in the uterine wall is possible (5). PAS is a severe complication of pregnancy associated with massive and life-threatening bleeding and has become one of the main causes of emergency hysterectomy (6).

Traditional classification

PAS has traditionally been classified based on the degree of penetration of the placenta into the myometrium (7). Therefore, only through the analysis of the post-hysterectomy uterus it's possible to know where the patient was classified into. Due of the limitations of the histology-based approach of the traditional classification, some clinical criteria have been included, obtained during the laparotomy, proposed by FIGO (7). Something similar has been previously described by Collins et al (8). Those findings are not necessarily related to surgical difficulty and expected bleeding volume. Some authors indicate that those kinds of findings can be observed even in the absence of PAS since they are present in cases of uterine dehiscence with placenta previa (9).

Table 1. General classification of PAS (FIGO)

Grade 1 Abnormally Adhered Placenta	Clinical criteria Vaginal delivery ● There is no separation with synthetic oxytocin and controlled cord traction.

(Adherent placenta or accreta).	● Attempts of manual removal of the placenta result in profuse bleeding from the site of placental implantation, requiring mechanical maneuvers or surgical procedures. If laparotomy is required (even for cesarean delivery) ● Same as above. ● Macroscopically, the uterus shows no obvious distention over the placental bed ("placental protrusion"), no placental tissue invading the surface of the uterus, and nonexistent or minimal neovascularization. Histological criteria ● Microscopic examinations of placental bed samples from a hysterectomy specimen shows wide areas of absent decidua between the villous tissue and the myometrium, with placental villi attached directly to the superficial myometrium. ● The diagnosis cannot be made with freshly harvested placental tissue or random biopsies of the placental bed.
Grade 2 Abnormally invasive placenta (Increta).	Clinical criteria At laparotomy ● Abnormal gross findings on the placental bed: bluish/purple coloration, distension (placental "lump"). ● Significant amounts of hypervascularization (dense vessels bed, convoluted vessels or multiple vessels running parallel and cephalocaudal along the uterine serosa). ● No placental tissue is observed invading the uterine serosa. ● Gentle cord traction causes the uterus to pull inward and there is no placental separation (the so-called dimple sign). Histological criteria.

	● Uterine sample from hysterectomy or partial myometrial resection of the inccreta area showing placental villi within the muscle fibers, and sometimes in the lumen of the deep uterine vasculature (radial or arcuate arteries).
Grade 3 Abnormally invasive placenta (Percreta).	**Grade 3a**: Limited to the uterine serosa Clinical Criteria In laparotomy ● Abnormal gross findings on the uterine serosal surface (as noted above) and placental tissue has invaded the surface of the uterus. ● No invasion of any other organ, the posterior wall of the bladder included (a clear surgical plane can be identified between the bladder and the uterus). Histological criteria ● Uterine specimen from hysterectomy, showing villous tissue within or perforating the uterine serosa.
	Grade 3b: Invasion of the bladder Clinical Criteria In laparotomy ● Placental villi are observed invade the bladder, but not other organs. ● No clear surgical plane can be identified between the bladder and the uterus. Histological criteria ● Uterine specimen from hysterectomy showing villous tissue perforating the uterine serosa and invading the bladder wall or the urothelium.
	Grade 3c: Invasion of other pelvic organs or tissues Clinical Criteria In laparotomy ● Placental villi are found invading the broad ligament, the vaginal wall, the pelvic lateral wall

	or any other pelvic organ (with or without invasion of the bladder). Histological criteria ● Uterine specimen from hysterectomy showing villous tissue perforating the uterine serosa and invading pelvic organs or tissues (with or without bladder invasion). For the purposes of this classification, "uterus" includes the uterine body and cervix.

In addition to the difficulties associated with the traditional classification, it does not provide an ideal route on how to manage each case. The management options for PAS are multiple (10,11), without concretely defining which strategy is superior to others. It is common for a hospital and its PAS expert group to choose one type of treatment option and specialize in it, applying it in almost all their cases despite the variability of clinical presentations of PAS. For example, some protocols include embolization before or after fetal extraction (12), others apply total (13) or subtotal (14) hysterectomy in all cases, and others prefer expectant management, leaving the placenta in situ and waiting for its expulsion or resorption after a few weeks (15).

The undiscriminated application of a specific procedure, exposes patients with less severe forms of PAS to the complications of that procedure (16), probably without gaining any additional benefit since they could have been managed with simpler interventions (2). Vascular management procedures (endovascular balloons, retroperitoneal dissection for aortic or internal iliac vessel clamping) have risks (17). Even total abdominal hysterectomy is associated with early ovarian failure and irreversible loss of fertility, along with psychological consequences for patients (18). Furthermore, it has been repeatedly demonstrated that hysterectomy is associated with greater blood loss, a higher rate of maternal complications and increased admission to intensive care for catastrophic bleeding (>2500 ml) compared to uterine sparing surgery (19).

Topographic classification

Due to the situation with the traditional classification, an interesting proposal rises, which is the topographic classification created by Palacios - Jaraquemada et al (1). This classification considers which uterine wall is affected (anterior, posterior or lateral), in addition to the level of involvement of the uterus (above or below the vesicouterine peritoneal fold) (4).

It also includes knowledge of uterine irrigation and changes in pelvic anatomy when PAS is present, making it clear that lesions that occupy the lower part of the uterus, cervix or parametrium, known as sector 2 of uterine vascularization (1,20), present greater surgical difficulty. In this location, in addition to a complex anastomotic arterial network (vesical, vaginal, and cervical arteries, among others), there is proximity to urinary, nervous and vascular structures. Considering all the aforementioned conditions, the intraoperative findings define the category in which the patient is classified and recommendations for surgical management are established (**table 2**) (4).

Table 2. Topographic classification of Placenta Accreta Spectrum (21)

Type of PAS	Arterial pedicles		Vascular procedures	Proposed treatment
0	UA		None	OSCS
1	UA, SVA		NFV dissection/ligation	OSCS
2	2U Upper (Upper)	ObtA, IIA collaterals, UA, UretV	NFV dissection/ligation	OSCS
	2L Low (Lower)	IIA collaterals, CA, VA, UretV	IRAA, bilateral CIA	Total hysterectomy
3	SVA, IVA, UA, CA, VA, VA		NFV dissection/ligature IRAA, bilateral CIA	OSCS vs Total hysterectomy

4	SVA, IVA, UA, CA, VA, VA		IRAA, bilateral CIA	MSTH
5	5U Upper (Upper)	UA, OA, collateral flow from IMA, IMA fr om IMA	UA ligation	OSCS
	5L Low (Lower)	UA, ARA collaterals	IRAA	Total hysterectomy

Intraoperative staging makes it possible to determine which uterine wall is affected and the relationship of the lesion to the vesicouterine peritoneal fold (above or below that level), as well as the predominance of neovascularization or the presence of vesicouterine fibrosis.

In each topography, arterial pedicles are identified that provide most of the irrigation to the PAS area and determine the recommended vascular procedures and the type of treatment required (One Step Conservative Surgery [OSCS], Total Hysterectomy or Modified Subtotal Hysterectomy [MSTH]).

PAS type 0: uterine "window" or dehiscence. PAS type 1: involvement of the upper part of the uterine segment. PAS type 2: parametrial involvement (2A: upper parametrial involvement, 2B: lower parametrial involvement). PAS type 3: involvement of the cervix or lower uterine segment (below the peritoneal reflex). PAS type 4: PAS type 3 plus vesicouterine fibrosis. PAS type 5: Involvement of the posterior uterine wall (5A: Involvement of the upper part of the posterior uterine wall. 5B: Lesions below the level of the peritoneal reflexion).

AU: Uterine artery. ***SVA:*** Superior vesical artery. ***NFV:*** Neo-forming vessels. ***ObtA:*** obturator artery. ***IIA:*** internal iliac artery. ***UretV:*** ureteral vessels. ***CA:*** cervical artery. ***VA:*** vaginal arteries. ***IVA:*** inferior vesical artery. ***OA:*** ovarian artery. ***IMA:*** inferior mesenteric artery. ***ARA:*** anterior rectal artery. ***IRAA:*** infrarenal aortic artery. ***ICA:*** common iliac artery

Another key factor is that a significant percentage of the hospitals responsible for the management of PAS do not have extensive experience in the management of the disease, and there are very few centers with a high flow of cases per year (22,23). Many of the hospitals do not have all the technological resources recommended by the so-called “centers of excellence” in PAS, nor do they have teams dedicated solely to the management of this disease ("PAS teams") (24,25). Those hospitals face difficulties in

choosing which type of treatment to offer each PAS patient who consults. Thus, it is common for most hospitals organizing their PAS team for the first time, to decide to offer hysterectomy to all their patients, even in cases with prenatal diagnostic uncertainty. Many groups even choose to apply vascular interventions to all of their PAS patients, even if such interventions ultimately prove to be excessive for the type of lesion found during surgery.

This is worrisome, as 22% of the cases taken to hysterectomy for PAS do not end up having the diagnosis (26). This has become more relevant since it has been reported that most patients with PAS present with "mild" forms of the disease due to "superficial" penetration of the placenta into the uterine wall (13) or involvement of the upper part of the uterus, known as vascular sector 1 (1). All that without mentioning how when evaluating the perceptions of patients treated for PAS, they express how important it would have been to have options other than hysterectomy and to know that there was the possibility of preserving fertility in selected cases (27).

In centers using the PAS topographic classification and individualized surgical management according to the severity of the lesion, up to 80% of cases can be managed with uterine-sparing surgery without increasing the volume of blood loss (1). The PAS topographic classification has been used in retrospective studies in low- and middle-income countries (1,4) that correlates with clinical outcomes that justifies specific surgical interventions in selected cases. For example, it has been found that type 1 classification, which is the most frequent, is associated with less bleeding and a higher uterine preservation rate; while the types that include low parametrial invasion and invasion of the bladder trigone do not exceed 10% of cases and are linked to increased bleeding and higher surgical challenges (1).

It should be noted that the available literature describing the relationship between topographic classification and its correlation with clinical outcomes is scarce, so it is considered essential to evaluate this classification in a prospective multicentric study that assesses its validity and correlation to surgical difficulty and

clinical outcomes, which could determine the usefulness of the classification in the clinical setting.

JUSTIFICATION FOR THE STUDY

This research aims to evaluate the usefulness of the topographic classification of PAS. Although the classification is based on intraoperative findings and recognizes the particularities within each case of PAS, which has shown correlation to surgical difficulty and the effectiveness of one or another treatment option. To date there are no prospective multicentric studies that deepen and provide further strength to the above associations. In addition, the ease of its application and the acceptability of its use by the obstetrician-gynecologists physicians who use it, is yet unknown.

The topographic classification recognizes the pelvic anatomy and specially the arterial pedicles that irrigate each part of the uterus. It can be applied before incising the uterus and causing bleeding, enables a smooth decision-making process to choose the most appropriate surgical technique for each case, as well as the need for specific vascular interventions. Confirming its usefulness in different countries will facilitate its use by interdisciplinary teams dedicated to the management of PAS at the international level.

RESEARCH QUESTION

Is the topographic classification of placenta accreta spectrum useful in determining possible clinical outcomes? How acceptable it is by obstetrician-gynecologists who manage PAS?

RESEARCH HYPOTHESES

The topographic classification of placenta accreta spectrum is useful in determining possible clinical outcomes. The topographic classification has high acceptability among obstetrician-gynecologists who manage PAS.

OBJECTIVES

- ***General***

  To evaluate the clinical outcomes of patients with a diagnosis of placenta accreta spectrum according to the topographic classification, and to explore the acceptability of this classification among obstetrician-gynecologists at the participating medical centers.

- ***Specific***

  1. To describe the demographic and clinical characteristics of patients with a diagnosis of placenta accreta spectrum.

  2. To analyze the clinical outcomes of patients diagnosed with placenta accreta spectrum according to the topographic classification.

  3. To explore the acceptability of the topographic classification for placenta accreta spectrum among obstetrician-gynecologists at the participating medical centers.

EXPECTED RESULTS

The aim of this study is to describe the demographic and clinical characteristics of patients with a diagnosis of placenta accreta spectrum, and to determine the correlation between the topographic classification and the clinical outcomes found in the study. Finally, to evaluated whether the proposed classification is accepted by the obstetrician-gynecologists of the participating centers that manage placenta accreta spectrum patients.

METHODOLOGY

Design:

1. Multicentric study of a prospective cohort.

   It is clarified that this is an observational study, in which data will be obtained from the medical records and other documents in each participating center, which are considered to be of routine use in day-to-day clinical practice. The study of the outcomes proposed in this protocol will be limited to those recorded in the clinical records and will be taken into account until the participant is discharged

from the hospital, during which a surgical intervention was performed due to the suspicion or diagnosis of PAS.

Study population:

1. Pregnant patients with a diagnosis of placenta accreta spectrum who visits any of the participating medical centers.
2. Obstetrician-gynecologists working in participating medical centers.

Participating centers:

1. Academic General Hospital. Dr. Soetomo. Universitas Airlangga. Indonesia.
2. Hospital Bertha Calderón Roque. Managua, Nicaragua.
3. Instituto Nacional Materno Perinatal. Lima, Peru.
4. Hospital General de Mexico. Dr. Eduardo Liceaga. CDMX, Mexico.
5. Hospital de la Mujer. Dr. Percy Boland Rodríguez. Santa Cruz de la Sierra, Bolivia.
6. Fundación Valle de Lili. Cali, Colombia.

Criteria for the participation of the medical centers:

The centers invited to participate are hospitals or clinics that already have knowledge in how to apply the surgical staging of PAS, and the topographic classification and have experience using it.

- Level I and II hospitals, which are referral centers for the management of patients with placenta accreta.
- Centers that handle more than 6 cases of placenta accreta per year.
- To have interdisciplinary groups dedicated to the management of placenta accreta.
- Have surgical management training on the various techniques recommended by the topographic classification.
- Skilled to perform OSCS (One Step Conservative Surgery), Modified Subtotal Hysterectomy (MSTH) and Total Hysterectomy procedures.

Patient admission criteria:

It is projected that the period of patient enrollment will last 2 years, counting on from the first participant included.

- Inclusion criteria:
  - Pregnant woman over 18 years old.
  - Prenatal diagnosis by ultrasound or MRI of PAS, regardless of the suspected degree of severity of the disease.
  - Case requiring surgical management, either as scheduled or emergent procedure.
  - Application of the topographic classification of placenta accreta spectrum during laparotomy.
- Exclusion criteria:
  - None.

Sample size and sampling strategy

Due the anatomical classification of the placenta accreta spectrum proposed in this protocol is a strategy scarcely addressed in clinical studies, at the time of writing down this document, there is no information on outcomes associated with this classification that would directly allow the calculation of the sample, taking into account the seven options provided within the classification. Therefore, it will be determined by means of the only available study of this classification that addresses clinical complications, which considers 4 types: T1) upper bladder, T2) parametrium, T3) low bladder and T4) low bladder + fibrosis. (1) It is appropriate to take the total percentage of complications for each type indicated in the article, as shown below.

	T1 n = 248	T2 n = 44	T3 n = 23	T4 N = 11

Total Complications	31.05%	50%	95.65%	100%

The sample size was calculated using the openepi web tool, available at: https://www.openepi.com/Menu/OE_Menu.htm. To approximate to a round number the sample calculation, it was used the Cohorts option, considering the unexposed group as the classification option with the lowest percentage of total complications (T1), and the exposed group as the classification option with the highest percentage of total complications (T4). With a confidence level of 95%, power of 80%, ratio of unexposed/exposed =1, percentage of unexposed positives = 31.05% and percentage of exposed positives = 99.99%; the following results are obtained.

Tamaño muestral: transversal, de cohorte, y ensayo clínico	
Nivel de significación de dos lados(1-alpha)	95
Potencia (1-beta,% probabilidad de detección)	80
Razón de tamaño de la muestra, Expuesto/No Expuesto	1
Porcentaje de No Expuestos positivos	31
Porcentaje de Expuestos positivos	100
Odds Ratio:	22000
Razón de riesgo/prevalencia	3.2
Diferencia riesgo/prevalencia	69

	Kelsey	**Fleiss**	**Fleiss con CC**
Tamaño de la muestra - Expuestos	8	7	9
Tamaño de la muestra- No expuestos	8	7	9
Tamaño total de la muestra	16	14	18

It is expected that as we progress through the 7 option types of the proposed classification, we will have fewer patients; this implies that the classification with the lowest recruitment expectation will be T5b. All logistic efforts and recruitment strategies will be made to obtain at least 9 patients in the least frequent option type, considering the Fleiss sample size on continuous adjustment. Due to the difficulty of obtaining a significant and similar number of patients on each option type, it is considered appropriate to include all cases of PAS who visit the participating centers and meet the admission criteria in the 2-year period, with the possibility of extension, if the minimum number of cases for each option

type is not achieved.

Data collection techniques

The group of obstetrician-gynecologists will inform the principal investigator or study coordinator about patients that can be included in the study. Once it is confirmed that they meet the inclusion criteria, the data will be collected from the electronic or paper-based medical records of the hospital, protecting the identity of the patients at all times.
Once the collection of patient data has been completed, the survey to evaluate the acceptability of the topographic classification of PAS will be administered to the group of obstetricians who manage placenta accreta at the participating centers. Each participating physician who has applied the topographic classification to the patients treated during the study period, will complete the survey only once at the end of the study period.

This information will be typed and stored in the RedCap platform. At Fundación Valle del Lili, the task will be performed by the research assistants' that are part of the principal investigators team, and in the participating hospitals by delegates designated by each center. The extraction and collection of data will be supervised by the principal investigator, with prior authorization from the ethics committee.

For the quality analysis, 10% of the data will be randomly sampled and compared with the medical records or paper-based documents. If there is discordance between the data, another 10% will be randomly analyzed and if there is still discordance, the entire database will be revised. This task will be the responsibility of each participating center, in relation to the number of patients admitted by them.

Data Management and Statistical Analysis

Specific Objective 1: To describe the sociodemographic and clinical characteristics of patients with a diagnosis of placenta accreta spectrum.

Descriptive Analysis: Stratification by subgroups will be performed according to the topographic classification of PAS, as follows: T1, T2a, T2b, T3, T4, T5a and T5b. Qualitative variables will be summarized as percentages and presented as absolute frequencies. For quantitative variables, the normality distribution will be determined by means of the Kolmogorov Smirnov statistic (sample size greater than 50 patients is foreseen), where a result of p value >0.05 would comply with the assumption of normality. For variables with normal distribution, mean and standard deviation will be determined; and for variables without normal distribution, median and interquartile ranges (Q1 - Q3) will be indicated.

Inferential Analysis: For quantitative variables, a statistical test of the difference between the means of the 7 subgroups (independent groups) will be performed by means of one-way ANOVA for independent groups. If the variable does not have a normal distribution, the Kruskall-Wallis test will be performed.

In both cases, the null hypothesis (H0) indicates that the mean or median numbers of the 7 subpopulations are equal; the alternate hypothesis (Ha) refers to the above being different. If the p-value indicated by those tests is ≥ 0.05 (5%), it can be stated that there are no statistically significant differences between the mean or median numbers of the 7 subpopulations, with 95% confidence, which is set for the study. If the p-value is < 0.05, the hypothesis of having no difference in the mean or median numbers (H0) is rejected. That does not imply that a particular subgroup is superior or inferior to another.

For qualitative variables, a statistical test of the difference in proportions of the 7 subgroups (independent groups) will be performed by means of the Chi-square test. A result with a p-value ≥ 0.05 (5%) can be interpreted as: the proportions of the variable in question do not differ, in terms of statistical significance, among the seven groups. In case the p-value is < 0.05 indicates that there are statistically significant differences between at least two of the seven groups with respect to the proportions of the variable addressed. This does not imply that a particular subgroup is superior or inferior to another.

The results are shown in Table 3.

Specific Objective 2: To analyze the clinical outcomes of patients diagnosed with placenta accreta spectrum according to anatomical classification.

Descriptive Analysis: Stratification by subgroups will be performed according to the anatomical classification of PAD as follows: T1, T2a, T2b, T3, T4, T5a and T5b. Qualitative variables will be summarized as percentages and presented as absolute frequencies. For quantitative variables, the normality distribution will be determined by means of the Kolmogorov statistic.

Smirnov (sample size greater than 50 patients is expected), where a result of p-value >0.05 would comply with the assumption of normality. For variables with normal distribution, mean and standard deviation will be determined; and for variables without normal distribution, median and interquartile ranges (Q1 - Q3) will be indicated.

Inferential Analysis: For quantitative variables, a statistical test of the difference in means of the 7 subgroups (independent groups) will be performed by means of one-way ANOVA for independent groups. If the variable does not have a normal distribution, the Kruskall-Wallis test will be performed.

In both cases, the null hypothesis (H0) indicates that the means or medians of the 7 subpopulations are equal; the alternate hypothesis (Ha) refers to the above being different. If the p-value indicated by these tests is ≥ 0.05 (5%), it can be stated that there are no statistically significant differences between the means or medians of the 7 subpopulations, with 95% confidence, which is set for the investigation. If the p-value is < 0.05, the hypothesis of equality of population means or medians (H0) is rejected. This does not imply that a particular subgroup is superior or inferior to another.

For qualitative variables, a statistical test of the difference in proportions of the 7 subgroups (independent groups) will be performed by means of the Chi-square test. A result with a p-value ≥ 0.05 (5%) can be interpreted as: the proportions of the variable in question do not differ in terms of statistical significance, among the seven groups. In case the p-value is < 0.05, it indicates that there are statistically significant differences between at least two of the seven groups with respect to the proportions of the variable been assessed. That does not imply that a particular subgroup is superior or inferior to another.

The results are shown in Table 4.

Specific Objective 3: To explore the acceptability of the topographic classification of

placenta accreta spectrum among obstetrician-gynecologists at the participating medical centers.

In the scientific literature there is no validated scale to evaluate the acceptability of a new clinical classification, which in this case is proposed as a topographic classification of PAS. After an exhaustive search, it was concluded that the *The Ottawa Acceptability of Decision Rules Instrument* would be utilized, which is a widely used instrument to evaluate the acceptability of a norm among physicians. There is no linguistic adaptation to Spanish, so a direct translation of its content was made.

After the principal investigator had reviewed it, was necessary make adaptations to some items, which were:

a) Change the original term "norm" to "*anatomical classification for PAS"*. In all items.
b) The following item is added: *The application of the anatomical classification for PAS generates an additional consumption of resources*. It is considered important to ask about that consideration, taking into account that the proposed classification will be very useful in low- and middle-income countries with limited healthcare systems.
c) Item withdrawn: *The evidence supporting the norm is flawed*, as there are not enough studies addressing the present classification; therefore, it is not relevant to include the item.
d) The following item is removed: *I am already following another norm or similar strategy*, since this proposed classification has no point of comparison with other types of classifications used in the day-to-day clinical practice.

Descriptive Analysis: Descriptive analysis will be performed using absolute frequencies and calculated percentages of the response option for each item. Finally, the absolute frequencies of each response option will be added up and the response percentage will be calculated to find the global acceptability of the anatomical classification of the placenta accreta spectrum, in relation to what was addressed in the survey.

The results are presented in Table 5.

Table of Variables

Variable Name	Definition	Type of variable	Operational Level	Measure Summary	Objective that resolves
1. Identifier number in the study	Unique consecutive number that identifies the participant in the study	Quantitative	Round numbers starting from 1	NA	NA
2. Date of surgery for PAS treatment	dd/mm/yyyy on which surgical management is performed for the treatment of placental accretism	NA	dd/mm/yy	NA	NA
3. Maternal age	Time in years, from the participant's date of birth to the date of visit, due to suspicion or diagnosis of PAS	Quantitative	Numbers greater ≥18	Central tendency and dispersion	1
4. Gravity	Number of pregnancies the patient has had at the time of the first visit for suspected or diagnosed PAS. (Considering the current pregnancy)	Quantitative	Number	Central tendency and dispersion	1
5. Parity	Number of previous deliveries of the patient at the first consultation for suspected or diagnosed PAS.	Quantitative	Number	Central tendency and dispersion	1
6. Previous Cesarean-sections	Number of previous cesarean sections the patient has had until the first visit for suspected or confirmed diagnosis of PAS	Quantitative	Number	Central tendency and dispersion	1
7. Placenta previa in the current pregnancy	Isthere placenta previa (total/partial/low lying) in the current pregnancy?	Qualitative Nominal	0: No1: Yes	Central tendency and dispersion	1
8. Prenatal diagnostic method of PAS	Diagnostic imaging study by which PAS is diagnosed	Qualitative Nominal	1: Ultrasound 2: Magnetic Resonance Imaging 3: Ultrasound and Magnetic Resonance Imaging 4: PAS prenatal diagnosis not available	Absolute frequency and percentage	1

			(intraoperative diagnosis of PAS)		
9. Gestational age at the time of delivery	Weeks of gestation at time of delivery of the current pregnancy	Quantitative	Number	Central tendency and dispersion	1
10. Topographic classification (Palacios-Jaraquemada)	Classification into 7 groups as described in *Annex 1*	Qualitative Ordinal	1: Type 1 2: Type 2U 3: Type 2L 4: Type 3 5: Type 4 6: Type 5U 7: Type 5L	Frequencies and percentages	1
11. Days of postoperative hospitalization	Number of days the patient was hospitalized from the day of surgery to the day of discharge.	Quantitative	Number	Central tendency and dispersion	1
12. Surgical time	Time in minutes between skin incision to skin closure	Quantitative	Number	Central tendency and dispersion	1

CLINICAL OUTCOME VARIABLES					
13. Type of surgery	Type of surgical priority	Qualitative Nominal	0: Programmed 1: Emergent	Frequencies and percentages	2
14. Intervention performed	Treatment option used	Qualitative Nominal	0: Total hysterectomy 1: Modified subtotal hysterectomy 2: One step conservative surgery 3. Other	Frequencies and percentages	2
15. Criteria on how to select surgical technique	Criteria for the selection of the type of intervention applied as management	Qualitative Nominal	1: Surgical technique chosen based on the topographic classification 2: Surgical technique chosen without the topographic classification	Frequencies and percentages	2
16. Volume of intraoperative blood loss	Blood volume lost during surgery measured in (ml)	Quantitative	Number	Central tendency and dispersion	2
17. Usage of vascular interventions	What type of vascular intervention was used during the surgery	Qualitative Nominal	1: None 2: Ligation of internal iliac arteries 3: Endovascular occlusion of internal iliac or common iliac arteries (balloons) 4: Clamping or ligation of the aorta 5: Aortic Endovascular Occlusion (Balloon) 6: Manual aortic compression 7.Other	Frequencies and percentages	2

18. Bladder injury	Did the patient end up with bladder injury due to the surgery for PAS?	Qualitative Nominal	0: No 1: Yes	Frequencies and percentages	2
19. Ureteral injury	Did the patient end up with ureteral injury during the surgery for PAS?	Qualitative Nominal	0: No 1: Yes	Frequencies and percentages	2
20. Surgical reintervention	Does the patient need surgical reintervention?	Qualitative Nominal	0: No 1: Yes	Frequencies and percentages	2
21. Complications associated with vascular interventions	The patient presented thrombosis or other complication during post-surgery associated with vascular interventions.	Qualitative Nominal	0: No 1: Yes	Frequencies and percentages	2
22. Post-operative ileus	Did the patient present ileus during postoperative period?	Qualitative Nominal	0: No 1: Yes	Frequencies and percentages	2
23. Supra-fascial hematoma	Did the patient present with supra-fascial hematoma post-surgery?	Qualitative Nominal	0: No 1: Yes	Frequencies and percentages	2
24. Maternal death	Does the patient die during this study?	Qualitative Nominal	0: No 1: Yes	Frequencies and percentages	2
25. Clavien Dindo Classification of complications	Classification of complications that occurred during this study according to the Clavien Dindo scale as shown in *Annex 3*	Qualitative ordinal	1. None 2. Grade I 3. Grade II 4. Grade IIIa 5. Grade IIIb 6. Grade IVa 7. Grade IVb 8. Grade V	Frequencies and percentages	2

Blank Tables

Table 3. Clinical characteristics of patients with a diagnosis of placenta accreta spectrum stratified by the topographic classification.

Feature	***Topographic Classification***						
	T1 ***n***	***T2U*** ***n***	***T2L*** ***n***	***T3*** ***n***	***T4*** ***n***	***T5U*** ***n***	***T5L*** ***n***
Maternal Age	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*
Gravity	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*
Parity	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*	*Mean or media n (SD or IQR)*
Previous cesareans *Yes No*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*
Placenta previa in the current pregnancy *Yes No*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*	*n (%) n (%)*
Trimester of gestation at the time of diagnosis of PAS *First trimester (≤12) Second quarter (from 13 to 28) Third trimester (>29)*	*n (%) n (%) n (%)*	*n (%) n (%) n (%)*	*n (%) n (%) n (%)*	*n (%) n (%) n (%)*	*n (%) n (%) n (%)*	*n (%) n (%) n (%)*	*n (%) n (%) n (%)*

Prenatal diagnostic method of PAS	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
Ultrasound	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
Magnetic Resonance	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
Ultrasound and magnetic resonance	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
PAS prenatal diagnosis not available (intraoperative diagnosis of PAS)							

Gestational age at delivery	*Mean or median (SD or IQR)*	*Mean or median (SD or IQR)*	*Mean or median (SD or IQR)*	*Mean or median (SD or IQR)*	*Mean or median (SD or IQR)*	*Mean or median (SD or IQR)*	*Mean or median (SD or IQR)*

Table 4. Surgical and clinical outcomes of patients with a diagnosis of placenta accreta spectrum according to an anatomical classification.

Clinical Outcome	***Topographic Classification***							
	T1 ***n***	***T2U*** ***n***	***T2L*** ***n***	***T3*** ***n***	***T4*** ***n***	***T5U*** ***n***	***T5L*** ***n***	***p-value***
Type of surgery	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Scheduled	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Emergency								
Type of procedure								
Total hysterectomy	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Subtotal hysterectomy	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Surgery one-step conservative	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Vascular intervention								
None	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Ligation of internal iliac arteries	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Endovascular occlusion of internal iliac or common iliac arteries (balloons)	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Clamping or ligation of aorta	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Endovascular aortic occlusion (Balloon)	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Manual aortic compression	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Another	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	

Stage of Hemorrhage								
Stage 1	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Stage 2	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Stage 3	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Stage 4	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Stage 5	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Bladder Injury								
No	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Yes	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Ureteral Injury	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
No	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Yes								
Arterial Thrombosis								
No	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Yes	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Post-operative ileus								
No	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Yes	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Supra-fascial hematoma								
No	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Yes	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Surgical reintervention								
No	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Yes	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Maternal death								
No	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Yes	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Classification of complications								
Grade I	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Grade II	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Grade IIIa	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Grade IIIb	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Grade Iva	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Grade IVb	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Grade V	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	

Table 5. Acceptability of the anatomical classification for placenta accreta spectrum among obstetrician-gynecologists from the participating medical centers (N).

Statements	*Strongly disagree*	*Moderately disagree*	*Slightly Disagree*	*Slightly agree*	*Moderately agree*	*Totally agree*	*No opinion/ Don't know*
The anatomical classification for PAS is easy to use.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
The anatomical classification for PAS is easy to remember.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
The anatomical classification for PAS is useful to me.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
The anatomical classification for PAS is clear and unambiguous.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
My colleagues would support the use of anatomical classification for PAS.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
Patients would benefit from the use of anatomical classification for PAS.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
The use of anatomical classification for PAS would result in a better use of resources.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
The use of anatomical classification for PAS would increase the likelihood of lawsuits	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*

The anatomical classification for PAS does not take into account an important clinical detail	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
The environment in which I work makes it difficult to use the anatomical classification for PAS.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
The application of topographic classification generates additional resource consumption.	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
TOTAL	***n (%)***	***n (%)***	***n (%)***	***n (%)***	***n (%)***	***n (%)***	***n (%)***

OPERATIONAL ASPECTS

The invited hospitals are institutions that already applying the proposed classification or that were previously trained to implement this classification, in addition to the surgical techniques that might be required in each case. Prior to this study, some health centers were trained by the principal investigator of this study via telemedicine (28). Likewise, the topographic classification of PAS been proposed (*Annex 1*) will be socialized and reinforced to the obstetrician-gynecologists who manage patients with placenta accreta spectrum, aiming to achieve a correct and standardized classification in all the participating centers, which reduces measurement bias. Prospective data collection will start from the moment the medical history is taken from the institutional database of each participating center, considering the qualitative and quantitative variables of the chosen population, that are related to the surgical intervention and the clinical outcomes during the postoperative period. In this case, the immediate postoperative period will be followed up until the time of discharge. All the information obtained will be typed and saved in the RedCaP platform, to have traceability of the information and ensure the confidentiality of the patient's data is maintain all the time.

The participating hospitals will make the necessary arrangements at the local level for the

execution of the study, sign a confidentiality agreement that states they are collaborating on this study with Fundación Valle de Lili. It will be the responsibility of each participating center to comply with local and international regulations on good clinical practices in research and the stipulations stated by the ethics committee.

Once the collection of patient data has been completed, a survey will be carried out to evaluate the acceptability of the topographic classification by the group of obstetrician-gynecologists who manage placenta accreta patients in each participating hospital. Given that for this last objective, the calm environment of those being evaluated could be disrupted by requesting their participation, prior to starting the survey, authorization will be requested for the use of the participants' data, their authorization being understood as affirmative if they choose "I accept" in the statement that provides that information, prior to the beginning of the questionnaire and their refusal if they do not choose to accept and/or do not complete the survey.

Subsequently, the methodology advisor and the statistical team will perform the analysis according to the tables of variables and blank tables proposed display the patients' characteristics and the results of the study. Once the above process has been completed, the manuscript will be written.

SOCIALIZATION OF RESULTS

The manuscript resulting from this study will be published in a journal indexed in Web of Science and/or SCOPUS; in addition, the results will be presented at congresses and other academic events related to the subject and the area of Obstetrics & Gynecology. The expected audience is obstetrician-gynecologists, as well as personnel in training in health areas, such as resident physicians and/or undergraduate students.

ETHICAL CONSIDERATIONS

The present study adheres to the Helsinki declaration and the 2016 CIOMS guidelines. All the investigators have successfully completed and passed the *Good Clinical Practice* (GCP) course, which is designed to prepare research personnel on how to conduct clinical trials with human participants.

Researchers agree to comply with the principles and responsibilities defined in the 2010 Singapore Declaration on Integrity in Research. All investigators state that they are aware

of the four principles of bioethics such as: autonomy, recognizing that all patients are capable of deliberating about their personal goals and acting on the decisions they can make. Patients with limited autonomy are entitled to protection. Beneficence, as the moral obligation to act in the welfare of others. Non-maleficence, which is understood as doing no harm and preventing harm. And justice, acting in an ethical and equitable manner.

- ***Risk Level (According to Resolution 8430)***

Given that this prospective research study only intends to classify patients with prenatal diagnosis of placenta accreta spectrum according to diagnostic images and intraoperative findings, in addition to describing clinical outcomes without intervening in the treatment decision-making process; nor it is contemplated to conduct surveys with conflicting questions of moral conduct, it is considered a research with minimal risk according to article 11 of resolution 8430 of 1993 of the Republic of Colombia, which classifies studies into 4 groups, the current study belonging to group B: "*B. Research with minimal risk: These are prospective studies that employ the recording of data through common procedures consisting of: physical or psychological diagnostic examinations or routine treatments, among which are considered: weighing the subject, electrocardiograms, hearing tests, thermographs, collection of feces and external secretions, obtaining placenta during delivery, collection of amniotic fluid upon rupture of membranes, obtaining saliva, decidual teeth and permanent teeth extracted for therapeutic indication, dental plaque and calculi removed by non-invasive prophylactic procedures, hair and nail clipping without causing disfigurement, blood collection by venous puncture in adults in good health, with a maximum frequency of twice a week and a maximum volume of 450 ml in two months except during pregnancy, moderate exercise in healthy volunteers, psychological tests to groups or individuals in which the subject's behavior will not be manipulated, investigation with medications of common use, wide therapeutic margin and registered in this Ministry or its delegated authority, using the indications, doses and routes of administration established, and which are not medications that are found in article 55 of this resolution".*

However, given that this is a prospective study where the peace of mind of those being evaluated could be disturbed by requesting their participation, prior to applying the first questionnaire to the participating obstetrician-gynecologists, in each case, authorization from the participants will be requested. At the beginning of the surveys there will be a section where they will have to select the option "**I accept**" to continue filling out of the

forms. Once the participant accepts, they will be able to continue filling out the survey; if the participant does not accept, the surveys will be made not available to be completed (**Annex 2**).

- ***Request for waiver of informed consent***

As mentioned above, this study will only use data from the medical records of the participants and will not carry out any type of intervention nor will it imply changes in the clinical behavior or prognosis of the patients admitted, for which reason an exception to the informed consent will be requested from the ethics committee of Fundación Valle del Lili.

- ***Risk-control strategies***

One of the potential risks of this study is the identification of the participating patients, therefore, we are committed to maintaining strict confidentiality and will not publish images or anything that confirms patients are participanting. In order to guarantee this, the patients will be hidden by means of numerical codes; furthermore, no person outside the research or the ethics committee will have access to the data. We declare that we are aware of and comply with the 1995 declaration of 1999 that regulates the use medical records in Colombia.

- ***Conflict of interest***

The researchers state that there are no conflicts of interest. This research has no direct impact on natural or environmental resources.

- ***Author***

The products of the proposed project will comply with the institutional rules of authorship, which in turn will be aligned with the recommendations of the ICMJE.

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SCHEDULE

Activity/ Year/ Name of month	2022 Oct	2022 Nov	2022 Dec	2023 Jan	2023 Feb	2024 Jan	2024 Feb	2024 Mar	2024 Apr	2024 May
1.Writing the protocol	x	x								
Approvals										
2. Socializing the protocol			x							
3. Methodology Evaluation			x							
4. Ethics committee evaluation				x	x					
Execution										
5. Collecting of the information					x	x				
6. Analysis of the data							x			
Socialization of Results and Reports										
7. Writing the paper								x		
8. Poster presentation (if aplicable)									x	
9. Article Submission										x
10. Reporting to Ethics Committee						x				
11. (Annual - Renewal)										

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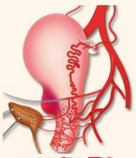
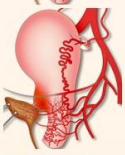
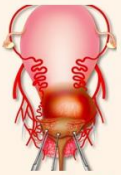
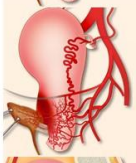
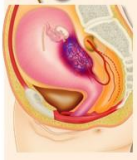
ANNEXES

Annex 1. Topographic Classification of Placenta Accreta Spectrum.
Intraoperative staging makes it possible to determine which uterine wall is affected and the relationship of the lesion to the vesicouterine peritoneal fold (above or below that level), as well as the predominance of neovascularization or the presence of vesicouterine fibrosis.
In each topography, some arterial pedicles are identified that provide most of the irrigation to the PAS area and that determine the recommended vascular procedures and the type of treatment necessary (One Step Conservative Surgery [OSCS], Total hysterectomy or Modified SubTotal Hysterectomy [MSTH])
Type 0 PAS: uterine "window" or dehiscense. Type 1 PAS: uterine segment upper part involvement. Type 2 PAS: parametrial involvement (2U: upper parametrial involvement, 2L: lower parametrial involvement). Type 3 PAS: cérvix or uterine segment lower part involvement (below the peritoneal reflection). Type 4 PAS: type 3 PAS plus vesicouterine fibrosis. Type 5 PAS: uterine posterior wall involvement (5U: involvement of the upper part of that wall. 5L: Lesions below the level of the peritoneal reflection)
UA: uterine artery. SVA: superior vesical artery. NFV: Newly formed vessels. ObtA: obturator artery. IIA: internal iliac artery. UretV: Ureteral vessels. CA: cervical artery. VA: vaginal arteries. IVA: inferior vesical artery. OA: ovarian artery. IMA: inferior mesenteric artery. ARA: anterior rectal artery. IRAA: infrarenal aortic artery. CIA: common iliac artery

Placenta Accrea Spectrum (PAS) Topographical classification

	PAS type	Arterial pedicles	Vascular procedures	Proposed treatment
	0	UA	None	OSCS
	1	UA, SVA	NFV dissection / ligature	OSCS
	2U	ObtA, IIA collaterals, UA, UretV	NFV dissection/ligature	OSCS
	2L	IIA collaterals, CA, VA, UretV	IRAA, Bilateral CIA	Total hysterect
	3	SVA, IVA, UA, CA, VA	NFV dissection/ ligature IRAA, Bilateral CIA	OSCS Total hysterect
	4	SVA, IVA, UA, CA, VA	IRAA, Bilateral CIA	MSTH
	5U	UA, OA, vicariant flow from IMA	UA ligature	OSCS
	5L	UA, ARA collaterals	IRAA, Bilateral CIA	Total hysterect

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Annex 2. Validated Ottawa Acceptability Assessment Survey

Indicate your level of agreement with each of the following statements in reference to the anatomical classification for PAD

DATA USE AUTHORIZATION PARAGRAPH:

This questionnaire is intended to collect information that will be used only for research purposes, your data will be handled only by the research team in charge of Fundación Valle del Lili (Cali - Colombia), respecting your confidentiality. Therefore, if you agree with the information presented and wish to participate in the study, please select "**I agree**", fill in your name and proceed with the questionnaire, otherwise, you can close this window and not continue with the survey.

Please fill in your full name:

_____

_____

Annex 3. Clavien Dindo classification of the severity of surgical complications.

TABLE 2. Clavien-Dindo Classification of Surgical Complications	
Grade I	Any deviation from the normal postoperative course without the need for pharmacological treatment or surgical, endoscopic, and radiological interventions. Allowed therapeutic regimens are: drugs such as antiemetics, antipyretics, analgetics, diuretics, electrolytes, and physiotherapy. This grade also includes wound infections opened at the bedside.
Grade II	Requiring pharmacological treatment with drugs other than allowed for grade I complications. Blood transfusions and total parenteral nutrition are also included.
Grade IIIa	Surgical, endoscopic, or radiological intervention that is not under general anesthesia
Grade IIIb	Surgical, endoscopic, or radiological intervention that is under general anesthesia
Grade IVa	Life-threatening complication requiring intermediate care or intensive care unit management, single organ dysfunction (including dialysis, brain hemorrhage, ischemic stroke, and subarrachnoidal bleeding)
Grade IVb	Life-threatening complication requiring intermediate care or intensive care unit management, multi-organ dysfunction (including dialysis)
Grade V	Death of a patient
Suffix "d"	If the patient suffers from a complication at the time of discharge, the suffix "d" (for "disability") is added to the respective grade of complication. This label indicates the need for a follow-up to fully evaluate the complication