



Clinical, anatomical and surgical characterization of ectopic pregnancy at the Fe del Valle Ramos Hospital, 2023-2024

Caracterización clínica, anatómica y quirúrgica del embarazo ectópico en el Hospital Fe del Valle Ramos, 2023-2024

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ABSTRACT

Introduction: ectopic pregnancy is a high-risk obstetric emergency requiring timely surgical intervention to prevent serious complications, including maternal mortality. In the context of the "Fe del Valle Ramos" Hospital, no recent studies existed characterizing its surgical management.

Objective: to characterize the clinical presentation, anatomical location, and surgical treatment of ectopic pregnancy in pregnant women treated at the Fe del Valle Ramos Hospital in Manzanillo.

Methods: a retrospective, cross-sectional, descriptive, observational study was conducted. One hundred and fifty-two pregnant women aged 18 to 35 years with a confirmed diagnosis of ectopic pregnancy, treated between January 2023 and December 2024, were included. Data were obtained through a review of medical records and a structured questionnaire. Statistical analysis included absolute and relative frequencies.

Results: ruptured ectopic pregnancy predominated (65,1 %; n=99). The most frequent anatomical location was the ampullary fallopian tube (63,1 %; n=96). The primary surgical treatment was salpingectomy (83,5 %; n=127).

Conclusions: the profile of ectopic pregnancy in the studied hospital is characterized by late diagnosis (ruptured state), a predominant ampullary location, and radical surgical treatment via salpingectomy. These findings highlight the need to implement strategies for early diagnosis and evaluate the feasibility of conservative therapeutic options, in accordance with current clinical guidelines.

Keywords: Ectopic pregnancy; Salpingectomy; Gynecological and obstetric emergency; Late diagnosis; Gynecological surgery

RESUMEN

Introducción: el embarazo ectópico constituye una emergencia obstétrica de alto riesgo cuya intervención quirúrgica oportuna es fundamental para prevenir complicaciones graves, incluida la mortalidad materna. En el contexto



del Hospital "Fe del Valle Ramos" no existían estudios recientes que caracterizaran su manejo quirúrgico.

Objetivo: caracterizar el estado clínico, la localización anatómica y el tratamiento quirúrgico del embarazo ectópico en gestantes atendidas en el Hospital Fe del Valle Ramos de Manzanillo.

Métodos: se realizó un estudio observacional, descriptivo y retrospectivo de corte transversal. Se incluyeron 152 gestantes de 18 a 35 años con diagnóstico confirmado de embarazo ectópico atendidas entre enero de 2023 y diciembre de 2024. La información se obtuvo mediante revisión de historias clínicas y un formulario estructurado. El análisis estadístico incluyó frecuencias absolutas y relativas.

Resultados: predominó el embarazo ectópico roto (65,1 %; n=99). La localización anatómica más frecuente fue la tubárica ampular (63,1 %; n=96). El tratamiento quirúrgico principal fue la salpingectomía (83,5 %; n=127).

Conclusiones: el perfil del embarazo ectópico en el hospital estudiado se caracteriza por el diagnóstico tardío (estado roto), la localización ampular predominante y el tratamiento quirúrgico radical mediante salpingectomía. Estos hallazgos destacan la necesidad de implementar estrategias para el diagnóstico precoz y evaluar la viabilidad de opciones terapéuticas conservadoras, en consonancia con las guías clínicas actuales.

Palabras clave: Embarazo ectópico; Salpingectomía; Urgencia gineco-obstétrica; Diagnóstico tardío; Cirugía ginecológica.

INTRODUCTION

Ectopic pregnancy, defined as the implantation of the blastocyst outside the endometrium of the uterine cavity, is a life-threatening condition and one of the most frequent obstetric emergencies during the first trimester. ⁽¹⁾ Its etiology is associated with various risk factors, including a history of pelvic inflammatory disease and other gynecological infections, which can cause tubal damage and disrupt embryo transport. Similarly, the sequelae of previous pelvic surgeries or the use of intrauterine devices increase the predisposition to this condition. ⁽²⁾

Globally, the incidence of ectopic pregnancy shows an upward trend, with figures ranging between 1 % and 2 % of all pregnancies. This increase is mainly attributed to three factors: the rise in risk factors, the greater use of

assisted reproductive technologies, and the implementation of more sensitive diagnostic methods that allow for the identification of previously undetected cases. ⁽³⁾ Although associated mortality has decreased, ectopic pregnancy still accounts for 10 % to 15% of maternal deaths in developed countries. Ruptured ectopic pregnancies are responsible for 2,7 % of pregnancy-related deaths and are the leading cause of maternal death in the first trimester. ^(4,5)

Anatomically, approximately 90 % of ectopic pregnancies are located in the fallopian tubes, while the remainder can occur in extrauterine sites such as the abdomen, cervix, ovary, interstitial portion of the fallopian tube, broad ligament, or in scars from previous cesarean sections. ⁽⁶⁾

Historically, cervical ectopic pregnancies were diagnosed intraoperatively during dilation and curettage (D&C) procedures for massive hemorrhage, often necessitating emergency hysterectomies. However, diagnostic and therapeutic advances, particularly since the 1980s, have allowed for a more conservative approach. Currently, less invasive alternatives are available, such as medical treatment with methotrexate, local hemostatic procedures, and fertility-preserving surgical techniques. ⁽⁷⁾

In Cuba, the incidence of ectopic pregnancy has also experienced a progressive increase, with a greater impact on young women of childbearing age, a trend that has been similarly reported in provinces such as Santiago de Cuba. ⁽⁸⁾ However, in the context of the "Fe del Valle Ramos" Gynecology and Obstetrics Hospital in Manzanillo, there are no recent studies characterizing the clinical and surgical management of this condition, which limits the local evaluation of its management and outcomes.

Therefore, this research aims to characterize the clinical presentation, anatomical location, and surgical treatment of ectopic pregnancy in pregnant women treated at the Fe del Valle Ramos Hospital in Manzanillo.

MATERIALS AND METHODS

A retrospective, cross-sectional, descriptive, observational study with a quantitative approach was conducted. The research took place at the "Fe del Valle Ramos" Gynecology and Obstetrics Hospital in Granma Province, Cuba, from January 2023 to December 2024.

The study population consisted of all pregnant women treated at the center with a confirmed diagnosis of ectopic pregnancy during the analyzed period (N=152). Given the manageable size of the study population, a census was conducted, including all patients who met the established criteria.

Inclusion criteria: Patients aged 18 to 35 years with a confirmed diagnosis of ectopic pregnancy based on clinical, ultrasound, and/or surgical criteria.

Exclusion criteria: Patients who died before surgery, those with documented cognitive impairments that could affect the quality of the information, or cases transferred to other institutions with incomplete medical records.

The following variables were analyzed: age (grouped), ectopic pregnancy status (ruptured/unruptured), anatomical location (tubal: ampullary, isthmic, fimbrial, interstitial; extratubal: ovarian, cervical, abdominal, intraligamentary), and type of surgical treatment performed (salpingectomy, tubal milking, adnexectomy, hysterectomy).

The information was collected using a structured form designed specifically for this study and validated by experts, supplemented by a systematic review of medical records.

The data were extracted using standardized methods and processed using IBM SPSS version 25.0. A univariate descriptive statistical analysis was performed, calculating absolute and relative frequencies (percentages) for the qualitative variables, which were presented in frequency distribution tables. The results were expressed with a 95 % confidence level.

The study adhered to the ethical principles established in the Declaration of Helsinki and was approved by the Ethics and Research Committee of the "Fe del Valle Ramos" Hospital. Data confidentiality and patient anonymity were guaranteed by using codes instead of personal identifiers. Given the retrospective design based on medical records, a waiver for individual informed consent was obtained from the evaluation committee.

RESULTS

Table 1 shows the distribution according to clinical status at the time of diagnosis. Ruptured ectopic pregnancy predominated (n=99; 65,1 %), compared to unruptured ectopic pregnancy (n=53; 34,9 %).

Table 1. Distribution of patients according to clinical status of ectopic pregnancy

Pregnancy status	n	%
Broken	99	65,1
Not broken	53	34,9
Total	152	100,0

Source: Medical records.

Table 2 presents the distribution according to anatomical location. Tubal location was overwhelmingly predominant (97,3 %), with the ampullary portion being the most frequent (n=96; 63,1 % of the total).

Table 2. Distribution of patients according to anatomical location of ectopic pregnancy

Location	n	%
Tubal		
Ampullary	96	63,1
Isthmian	29	19,1
Fimbric	21	13,8
Interstitial	2	1,3
Tubal Subtotal	*148*	*97,3*
Extratubal		
Ovarian	1	0,7
Intraligamentary	2	1,3
Abdominal	1	0,7

Location	n	%
<i>Extratubal subtotal</i>	*4*	*2,7*
Total	152	100,0

Source: Medical records.

Finally, Table 3 details the surgical treatment used. Salpingectomy was the most frequently performed procedure (n=127; 83,5 %), followed by the combination of salpingectomy and adnexectomy (n=17; 11,2 %).

Table 3. Distribution of patients according to the type of surgical treatment performed

Surgical treatment	n	%
Salpingectomy	127	83,5
Tube milking	3	2,0
Oxoidectomy	1	0,7
Salpingectomy and oophorectomy	17	11,2
Hysterectomy	3	2,0
Hysterectomy and oophorectomy	1	0,7
Total	152	100,0

Source: Medical records.

DISCUSSION

Ectopic pregnancy is a highly complex gynecological and obstetric emergency, the evolution and management of which depend on specific clinical, anatomical, and surgical factors. ⁽⁹⁾ The results of this study provide an updated characterization of these variables in a Cuban hospital setting and allow for comparisons with international and national evidence.

Regarding the clinical status at diagnosis, the finding of a predominance of ruptured ectopic pregnancies (65,1 %) contrasts with the report by Ayala Pacheco et al. ⁽¹⁰⁾, who documented a higher percentage of unruptured pregnancies (62,3 %). However, the results coincide with the study by Sharma et al. (11), which reported an even higher prevalence of ruptured cases (85,1 %). The authors consider that this variability may be attributed to differences in access to health services, the timeliness of early ultrasound diagnosis, and the local prevalence of risk factors such as previous genital infections or pelvic surgeries, factors that can delay clinical suspicion and favor progression to rupture.

Regarding anatomical location, the results of this study confirm the predominant pattern of tubal implantation (97,3 %), with a clear emphasis on the ampullary region (63,1 %). These findings are consistent with those reported by Perdomo-Duero et al. ⁽¹²⁾ (78 % tubal) and del Ángel Ramos (13) (88,2 % tubal). The authors attribute this high frequency to the pathophysiology of ectopic pregnancy, in which structural or functional alterations of the fallopian tube, frequently secondary to pelvic inflammatory disease, lead to ectopic implantation in its widest and most distensible portion.

Regarding surgical treatment, salpingectomy was the most frequently performed procedure (83,5 %), a result that aligns with the observations of Huamán Pacco ⁽¹⁴⁾, who reported its use in 81 % and 46,3 % of cases in two separate studies. The authors interpret the high frequency of salpingectomy as being directly related to the high proportion of ruptured pregnancies and the predominant ampullary location, clinical situations that often compromise the anatomical integrity and functional viability of the fallopian tube, limiting the options for conservative surgery. This approach prioritizes the immediate resolution of the hemorrhagic emergency and the prevention of recurrences, although it has implications for the patient's future fertility.

The authors acknowledge that the predominance of salpingectomy, despite advances in minimally invasive techniques and medical treatments, reflects a clinical scenario where the diagnosis is usually established in advanced stages. This underscores the need to strengthen early diagnostic strategies, based on systematic clinical suspicion and the standardized use of ultrasound in the first trimester, especially in patients with identified risk factors.

Finally, it is worth noting that, while severe hemorrhagic complications, particularly in interstitial locations, may require complex surgical approaches and advanced hemostatic control techniques ^(10,15), in this series, the

predominant ampullary location and timely surgical management likely contributed to a favorable clinical outcome in most cases.

In conclusion, the results of this research outline a pattern of ectopic pregnancy presentation characterized by late diagnosis (ruptured state), predominant ampullary location, and radical surgical treatment (salpingectomy) as the primary strategy. These findings, despite the limitations noted, reinforce the importance of implementing local programs that improve early diagnosis and evaluate the feasibility of more conservative therapeutic options, in accordance with current clinical guidelines that prioritize fertility preservation when clinical conditions allow.

The authors identify several methodological limitations in this research. First, the retrospective and cross-sectional design prevents establishing causal relationships and evaluating the temporal evolution of the variables. Second, the non-probability sampling and the restriction to a single hospital center limit the generalizability of the findings to other population contexts. Third, potentially confounding or effect-modifying variables, such as symptom duration, β -hCG levels, or parity, which could influence both clinical status and therapeutic decisions, were not analyzed. Finally, the absence of a comparison group and inferential statistical analyses prevents testing specific hypotheses about the factors associated with the different surgical outcomes.

CONCLUSIONS

Ectopic pregnancy in the studied context was characterized by predominantly late diagnosis (ruptured state: 65,1 %), a majority anatomical location in the ampullary fallopian tube (63,1 %), and surgical treatment based primarily on salpingectomy (83,5 %). This profile reflects a clinical scenario where hemorrhagic urgency dictates a radical approach, limiting conservative options. The findings underscore the need to implement strategies for early diagnosis through systematic suspicion and timely use of ultrasound, aligning local practice with current guidelines that prioritize fertility preservation when feasible.

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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