

## **Ectopic Pregnancy in Non-Adnexal Abdominal Cavity: Is it an Acute Abdomen?**

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## ABSTRACT

**Ectopic pregnancy is a rare condition defined as a pregnancy where the oocyte implants anywhere outside the endometrial tissue of the uterus, but it is even more remotely rare, the ectopic pregnancy in non-adnexal abdominal cavity. The objective is to report a case and analysis of the literature. 27-year-old female patient, who comes to the emergency department. No history of importance. Emergency surgery was performed due to clinical data of acute abdomen and systemic inflammatory response, in the exploratory laparotomy; a partial salpingectomy and a right oophorectomy, are performed tumour and/or gestational sac is resected. The clinical picture does not correspond in most cases to the diagnosis, so ultrasound is the gold standard for it. The treatment will depend on the special characteristics of each case and the criteria or expertise of the surgeon, as well as the health infrastructure installed. The driving lines are diverse and it's prognosis is unexpected. The imperative to have a treatment judgment, as urgent or scheduled, type of surgical approach, adjuvant or exclusive therapy with methotrexate in conservative management; or failing that, only close surveillance for full-term pregnancy. Concluding in a prognosis that allows strategically, decimating the morbidity and avoiding the mortality of the patient.**

**Keywords:** Pregnancy. Ectopic. Ultrasound. Abdominal ectopic pregnancy.

## INTRODUCTION

Ectopic pregnancy (**EP**), is a rare condition is defined as a pregnancy where the oocyte implants anywhere outside the endometrial tissue of the uterus, but it's even more remotely rare, ectopic pregnancy in non-adnexal abdominal cavity (**EPAAC**). [1] In the year 966 it is described for the first time by the cordovan doctor Albucasis (Abul Quasim al-Zaharaw) **EPAAC**. [2, 3] **EP** its anatomical incidence is tubal in 85% to 98%, ovarian approximately 3% and the **EPAAC** it is less than 1% or really anecdotal. [1]

## OBJECTIVE

Report of a case and analysis of the literature.

## CASE REPORTS

27-year-old female, who goes to the emergency service of the General Hospital "Dr. Rubén Leñero" of the Secretary of Health from Mexico City; no history of importance, no chronic-degenerative pathology, smoking and occasional alcoholism. Denies surgical history and obstetrician-gynaecologists describe the nubile patient, beginning of active sexual life at 17 years of age, sexual partners three, no family planning method. Date of last menstrual period one week ago of common characteristics. Rhythm every 28 days for 6 days, eumenorrheic. Refers oppressive abdominal pain, deaf and colic in the right iliac fossa, epigastrium onset of more than four days of evolution. With hyporexia, asthenia and adynamia, with nausea without vomiting, denies diarrhoea, denies fever, but does indicate chills. Physical examination showed vital signs with tachycardia, heart rate of 110 per minute, respiratory rate with tachypnea 26 per minute, euthermic, with blood pressure of 106/65 mm Hg. Abdominal facies, conscious, cooperative but diaphoretic, cardiopulmonary without compromise, slightly globular abdomen, with present and normal peristalsis, with medium and deep palpation with abdominal pain and present decompression, present appendiceal points and maneuvers. Vaginal examination without data of bleeding, with bimanual pain on touch on the right side,

with data on peritonism and acute abdomen. Laboratories: blood count with leukocytosis of  $19.5 \times 10^9/L$  and neutrophilia of 96%, hemoglobin of 14 gr/dl, with hematocrit of 48%, platelets with thrombocytosis of  $573 \text{ mL} \times 10^9/L$ . Normal blood chemistry and serum electrolytes. Prolonged prothrombin time in 18". Minimally increased bilirubin 1.4 mg/dl at the expense of indirect bilirubin 1.2 mg/dl. Abdominal X-rays are not available in the hospital, there is no ultrasound, nor is there a computed tomography.

Emergency surgery was performed due to clinical data of acute abdomen and systemic inflammatory response; in the exploratory laparotomy, the infra-umbilical midline was incised, finding 300 cc serohematic reaction fluid, with a tumour of 20 cm long by 13 cm wide with adequate color, consistency, with acceptable blood circulation and smooth edges: depending on the tubo-ovarian pedicle or right ovarian artery. Uterus and left ovary with normal characteristics, cecal appendix and the rest of the thick and thin intestine without alterations are identified.

But the right ovary with an increase in size of 10 cm in diameter, with an ocher color to a grayish hue, with an ischemic appearance, macerated and with little odor; also ischemic changes of the uterine tube at the level of the infundibulum and the fimbria. The tumor described with vascular supply from the right ovarian artery. It is concluded that there is vascular suffering and infection of the right ovarian tissue, it is the cause of the clinical picture of the patient with the acute abdomen. **Figure 1 and 2.**



**Figure 1: Gestational sac in connection to right ovary**

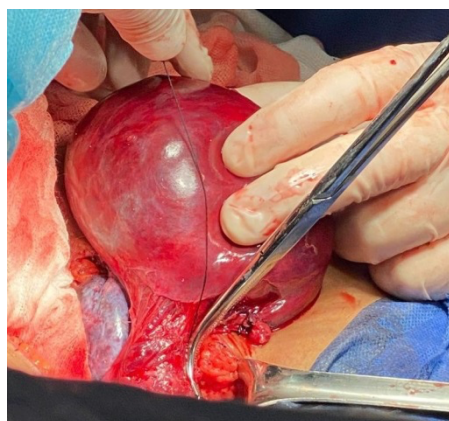


**Figure 2: Adhered gestational sac to ovary, fimbria and right ureter**

Given the suspicion of pregnancy in the abdominal cavity, human chorionic gonadotropin hormone beta fraction was requested, with a negative qualitative result. Partial salpingectomy and right oophorectomy were dried up, the previously described tumour and/or gestational sac was resected. **Figure 3.**



**Figure 3: Surgical piece of the gestational sac**

Hemostasis is verified and the procedure ends with minimal bleeding. Surgical pieces are sent to pathology. His evolution is adequate and discharge home in 48 hours without any complications, with follow-up in the external consultation clinic. The pathological report confirms the diagnosis of **EPAAC**.

### **DISCUSSION**

The denomination of abdominal ectopic pregnancy is not correct, since all pregnancies are in the abdomen and an **EP** too, for this reason the authors describe a different semantics as **EPAAC**; this is extraordinarily rare from the **EP** group, which can explain the complexity of the preoperative diagnosis and that almost always, it is in the trans operative moment or in the pathology report; this becomes a reality, since the clinical presentation is uncertain and it is the only **EP** that can reach term; and with a non-existent incidence, as well as a null experience of the gastrointestinal surgeon.[4] This is why the bulwark of carrying out an abdominal or trans-vaginal ultrasound, since it is the gold standard for diagnosis with a sensitivity and specificity of 94% and 87% respectively, although the limitation is the skill of the operator; other resources is computed axial tomography or nuclear magnetic resonance, [5, 6] to achieve a preoperative diagnosis and to be able to plan the surgical-therapeutic strategy in the short, medium or long term.

The Studdiford criteria described in the last century in the year 1946; [1, 6] they are precepts used and referred to in the literature to date; with the aim of diagnosing an **EPAAC**, which are:

- Both tubes and ovaries must be in normal condition and without evidence of recent injury.
- There should be no utero-peritoneal fistula.
- There must be exclusive relationship with the peritoneal surface from an early stage.

These concepts in their essence are analyzed, flattering doubt and controversy; since they are encased in a classist or unreal scenario.

In the first place, the anatomy of the human being may have biological variants or suffer from local or systemic concomitant diseases, which influence the implantation of the same oocyte and if it is implanted in the abdominal cavity, outside the uterus or its annexes, it is still an **EPAAC**.

Second place, the concept of utero-peritoneal fistula is ambiguous, since the real term is perforation, which due to pressure differences is not possible to be determined as a fistula in perpetuity (by definition it is more than 14 days old and the union of one epithelium with another), not being possible its physical-scientific existence.

Lastly, the correlation, inclusive of what refers to the peritoneal surface, does not detail whether it is visceral or parietal peritoneum, and the abdomen has areas where there is no peritoneum and remains the abdominal cavity (cervix, Douglas sac), so it does not apply.

The clinical picture of an **EPAAC** is mostly not consistent with the physical examination. [7, 8] The reports of the levels of the hormone beta human chorionic gonotropin (**β-hCG**) are inaccurate in some cases, since the laboratory reagents in certain hospitals are qualitative and not quantitative, as are anembryonic pregnancies or the same degeneration or viability of the gestational process alters the results. That is why the combination of ultrasound, the level of **β-hCG**, together allow to permeate diagnostic sensitivity and specificity. [9] It is pertinent to mention trans-vaginal ultrasound as a diagnostic tool for **EPAAC** [10], not to mention resources such as computerized axial tomography and nuclear magnetic resonance. [11]

Once the diagnosis is made, the treatment will depend on the clinical presentation or the **EPAAC** scenario; [12] so you must evaluate the following characteristics or parameters:

1. Implantation site.
2. Vascular supply or blood viability.
3. Gestational age.
4. Clinical status of the patient (acute abdomen or not, symptoms or signs and complete clinical history, hemodynamic instability or not, signs of systemic inflammatory response, etc.)
5. Viability of the pregnancy at term or not.
6. Quantitative levels of **β-hCG**.
7. Compromise of another organ that compromises the life or function of the patient.

The anatomical sites of **EP** implantation are varied or diverse, tubal, interstitial, ovarian, liver, heterotopic, [13] cervical, cesarean scar, retroperitoneal, rectum, spleen, and others have been documented. [1, 11, 12, 14, 15, 16] But in the vast majority of cases, the diagnosis is suspected at the time of the surgery itself and will depend on the expertise of the surgeon and the health infrastructure installed. [1, 14, 15] The treatment will depend on the scenario with which each specific case is presented; the main axis of management is surgical, with conventional or laparoscopic approaches, exposed by the vast majority of the medical literature found, [10, 17] and the authors consider that it depends on the cultural and/or educational level of the patient, as well as the Sanitary capacity installed in the locality, for an opportune diagnosis and a non-invasive or conservative treatment. Systemic administration of methotrexate as adjunctive therapy along with post-cervical aspiration of the gestational sac is highly successful for **EP** treatment. [18] Just like **EP**, a single dose of methotrexate without mifepristone can be treated. It is used as first line in patients who are candidates for non-invasive conservative therapy. [19]

Uterine artery embolization has now been documented with good results and may be a valid treatment for EP. [6, 20] Morbidity is very high, but mortality is the most exponentially feared scenario, which occurs and has not changed for more than a decade in the EPAAC. [5, 21, 22]

### CONCLUSION

The clinical picture of the acute abdomen is the determining factor that decides the emergency surgical treatment of an undiagnosed EPAAC, but it is not the cause of the acute abdomen.

All of the above is considered to have a treatment position, such as urgent or scheduled, type of surgical approach, adjuvant therapy or exclusive to conservative pharmacological management or, failing that, only close surveillance for full-term pregnancy, which will also depend on the criteria or expertise of the surgeon, educational and/or cultural level of the patient, as well as the health infrastructure installed.

Concluding in a prognosis that allows to strategically decimate the morbidity and avoid the mortality of the patient.

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