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HeterotopicPregnancy:CaseReport

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1. Abstract

Heterotopic pregnancy is defined by the presence of an intrauter- inepregnancyandanectopicpregnancyinanylocation,mostlyin the uterine tubes. It is a rare obstetric pathology. However, in re- centyearsitsincidencehasincreasedduetoassistedreproduction treatments. His diagnosis remains a challenge. Ultrasound is the mostimportanttoolinitsdiagnosisandearlyidentification.Lapa- roscopy remains the definitive method of extrauterine pregnancy. Wepresentthecaseofa39-year-oldpatient,withagestationof6 weeks by date of last menstrual period, with a diagnosis of heter- otopic pregnancy, where the extrauterine pregnancy is located in the uterine tube.

2. Introduction

Heterotopic pregnancy is defined by the presence of an intrauter- inepregnancyandanectopicpregnancyinanylocation,mostlyin theuterinetubes[1].ThefirstcasewasdescribedbyDuberneyin 1708 in the findings of an autopsy in France [1-3].

Thistypeofpregnancyisextremelyrare,occurringin1in30,000 to 50,000 spontaneous pregnancies. However, in recent years its incidence has increased due to assisted reproduction treatments, increasing by up to 1% in pregnancies achieved through these techniques[1,2,4,5].Othersreportanincreasedincidenceofap- proximately 1 in 3,900 pregnancies achieved by infertility treat- ment [6].

Thelocationofectopicpregnancyismorefrequentintheuterine
tubes inupto 90%ofcases, followedbythe ovary(1-3%),cervix

(1%),interstitial(1%),abdominal(1%),andcaesareansectionscar (1-3%) [2].

In relation to the clinical picture, it can be asymptomatic in 24% of cases, abdominal pain in 72% and 54% have vaginal bleeding. In heterotopic pregnancy the chances of miscarriage are doubled [7, 8].

Early diagnosis is often extremely difficult because intrauterine pregnancy masks ectopic pregnancy [9]. Determination of human chorionic gonadotropin level and transvaginal ultrasound are the most useful options for diagnosis [1, 2, 6]. Early management is essential to avoid serious maternal complications, since it is as- sociated with high maternal morbidity and mortality [1, 9]. The main objective in the treatment of this pathology is to terminate theextrauterinepregnancywithoutaffectingtheviableintrauterine pregnancy [2, 9-11].

Expectant management, ultrasound-guided local injection of hy- pertonic solutions, and laparoscopic surgery are options for the treatmentofthisdisease.Thebestoptionwilldependontheexpe- rienceofthetreatingphysician,aswellastheclinicalandhemod- ynamic status of the patient [1].

Fetalprognosisismostlyuncertain,evenaftertreatmentasap- proximately35%ofcasesconverttospontaneousabortions[9].

3. Case Report

39-year-old patient, second pregnancy, no family history, no per- sonalhistory,nosurgicalhistory,bloodgroupORh+,non-reactiveserologicaltests (HIV,RPR), witha6-week pregnancybydateof last menstrual period. It brings the result of a particular transvaginal ultrasound that concludes with a left tubal ectopic pregnancy of 6 weeks+ 4 daysanda humanchorionicgonadotropinlevelof 23710mU/mL.Shegoestotheemergencyroomduetoslightvag- inal bleeding 3 days ago associated with pelvic pain. On physical examination,hehasbloodpressureof110/70mmHg,heartrateof 88beatsperminute,respiratoryrateof16perminute,temperature of 36.70.Abdominal examination showed no evidence of peritoneal signs. Vaginal examination revealed scant vaginal bleeding.

Laboratory tests reported a hemoglobin of 12.8 gr/dl, leukocytes of 10,900 cells/mm3, coagulation profile within normal parameters, glucose of 80 mg/dl, urea of 21 mg/dl, creatinine of 0.30 mg/dl,non-reactiveCovid-19antigen,negativeurinalysis,human chorionic gonadotropin level of 25500mU/mL.Atransvaginal ultrasoundwasperformedthatreportedauterussizeof90mm,endometrium of 7mm, a gestational sac of 13mm with the presence of an active embryo of 8mm in the left adnexa, free douglas cul-de-sac,concludinguncomplicatedectopicpregnancy.Itwasdecided to hospitalize the patient with the diagnosis of uncomplicated left adnexal ectopic pregnancy to the gynecology service for medical management and hemodynamic monitoring.

During hospitalization, a transvaginal ultrasound was performed in the infertility service, the findings being the presence of a gestational sac in the uterine cavity with an inactive embryo of 6mm byCrown–RumpLength(CRL).Attheleftparaovarianlevel,gestational sac is evident with an active embryo of 5mm by crown–rump length, heartbeats at 156 per minute, heterotopic pregnancy is concluded (Figure 1-3). It is decided to schedule for surgery.

A laparoscopic left salpingectomy was performed, the findings being the presence of a 3x2cm violaceous tumor in the left tube, at the level of the ampullary area. In addition, manual uterine aspiration was performed, with the findings being the extraction of uterineremains,regularquantity,withoutbadodor.Theresultsof the pathologies confirm the presence of pregnancy.

Thepatientevolvedfavorably,hercontrolhemoglobinwas12.2gr/dl.Soshewasdischargedthenext day.

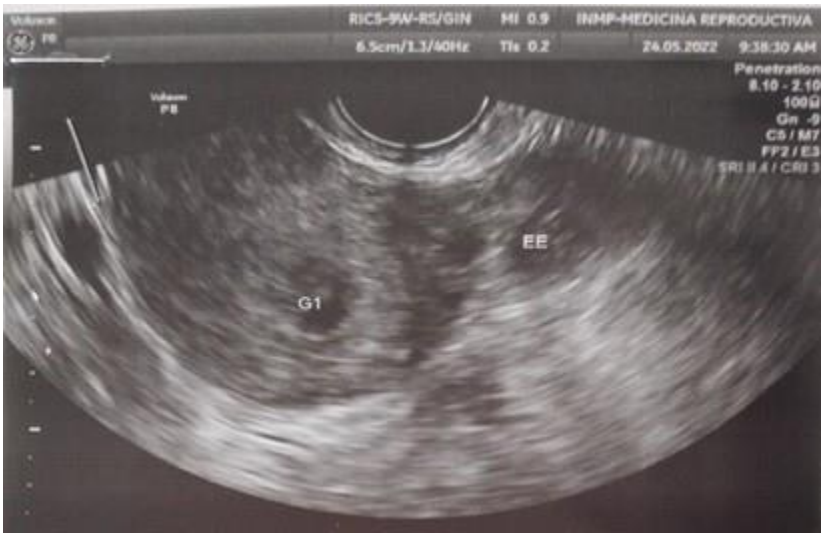

Figure1: Ultrasoundimageofheterotopicpregnancy(G1:intrauterinepregnancy,EE:ectopicpregnancy).

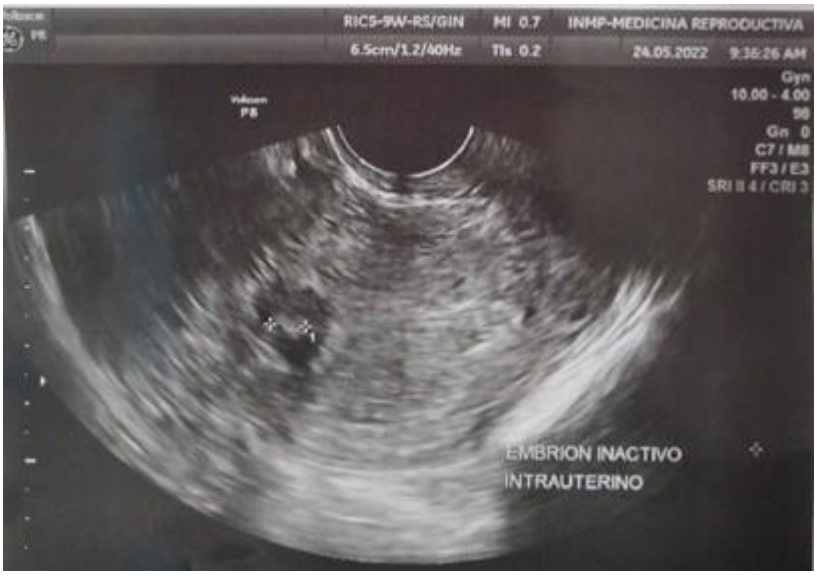

Figure2: Intrauterine pregnancywithinactive embryo.

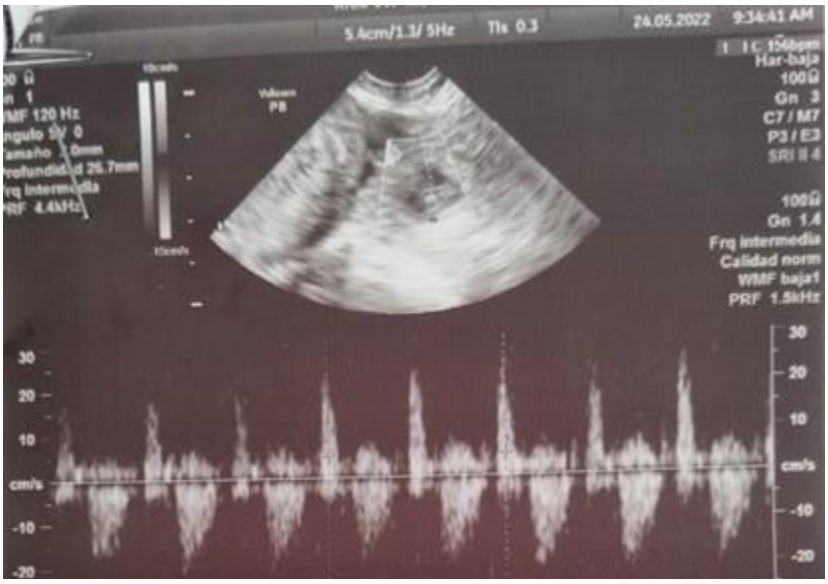

Figure3: Active lefttubalectopic pregnancy.

4. Discussion

Heterotopicpregnancyisarareobstetricpathologythatcanoccur spontaneouslyoraftertheuseofassistedreproductivetechniques [3, 4, 7]. There are other risk factors for heterotopic pregnancy such as pelvic inflammatory disease, pelvic surgery, and damage orpreviouspathologyofthefallopiantubes[3].Ithasbeenreport- ed that 50% of cases do not present identifiable risk factors [4]. Ourcasedidnothaveanyriskfactorsandconceivedspontaneous- ly, which is why it is more difficult to detect.

In 95% of cases, ectopic pregnancy occurs in the fallopian tube, butitcanalsobefoundinthecervix,cesareansectionscar,ovary, interstitialsegmentandabdominalcavity.3Ramírezetal.12men- tions a review by Reece that estimated that 94% of extrauterine pregnancies related to heterotopic were tubal and 6% ovarian. In ourcase,theectopicpregnancywaslocatedintheleftuterinetube, confirming its high frequency in that area.

The clinical picture of heterotopic pregnancy varies widely, the most frequent being abdominal pain (80%), vaginal bleeding (50%) and hypovolemic shock (13%). It may be asymptomaticin 24% [1-3]. Therefore, early management is essential to avoid serious maternal complications, since it is associated with high morbidityandmortality[1,9].Oanceaetal[9].Carriedoutasys- tematic review on spontaneous heterotopic pregnancy where the majority presented abdominal pain as the main symptom. Yu etal [8] carried out a retrospective study in 25 cases, where 68% of thepatientspresentedabdominalpainand/orvaginalbleedingand the remaining 32% were asymptomatic. Our case presented scant vaginal bleeding associated with pelvic pain.

Transvaginal ultrasound is a valuable tool in the diagnosis of het- erotopic pregnancy combined with the measurement of human chorionicgonadotropin.Therearenospecificinvestigationsavail- able to detect this pathology, or even resort to exploratory lapa- roscopyorlaparotomyincaseswheretheultrasoundfindingsare notclear[9].Thedetectionrateinasymptomaticwomenis15.8% andcanvaryfrom41to84%inwomenwithpelvicpain[10].The most frequent ultrasound images are the adnexal mass and free fluid in the cul-de-sac of Douglas, in the presence of intrauterine pregnancy [13].

It is not easy to make the diagnosis when the embryo is not iden- tified in the ectopic pregnancy [10]. The visualization of the em- bryonic cardiac activity of the ectopic pregnancy and of the in- trauterine embryo constitute a pathognomonic sign of heterotopic pregnancy [10]. In patients with a known history of in vitro fertil- ization who are considered at high risk of presenting heterotop-ic pregnancy, their evaluation is carried out from early stages of pregnancy with ultrasound control, finding a reported sensitivity, specificity,positivepredictivevalueandnegativepredictivevalue of 92 %, 100%, 100%, and 99%, respectively [4].

Early diagnosis of heterotopic pregnancy is often extremely dif- ficult because an elevated serum human chorionic gonadotropin levelandanintrauterineembryoseenonultrasoundsuggestanor- malpregnancy,andalmostnoonelooksforaheterotopicpregnan- cy if the patient is asymptomatic [3]. In most cases, the diagnosis of heterotopic pregnancy is late, when rupture occurs and there is presence of hemoperitoneum [9].

About70%ofheterotopicpregnanciesarediagnosedbetween5-8 weeksofgestationalage,20%between9and10weeks,and10% beyond11weeks[2-4,10,14].Ourcasewasdiagnosedat6weeks of gestational age.

Thetreatmentofheterotopicpregnancywilldependonthecondi- tion of the patient,the size and site of the extrauterinepregnancy, if she has had previous pregnancies, the viability of the intrauter- ine and extrauterine gestation, and the experience of the doctors [3].Themainobjectiveistoterminatetheextrauterinepregnancy without affecting the viable intrauterine pregnancy. Management includesseveraloptionsfromwatchfulwaitingtoultrasound-guid-

ed local injection of potassium chloride or hyperosmolar glucose. Theuseofmethotrexateiscontraindicatedinthepresenceofalive intrauterinepregnancy.Laparoscopyremainsthedefinitivemeth- od of extrauterine pregnancy. Laparotomy has been reserved for patients with hemoperitoneum and hemodynamic instability [2, 10, 11, 13, 15].

The prognosis of intrauterine pregnancies is influenced by early management,withabortionsreportedinbetween50%and66%of cases.Oneinthreewillmiscarry.2.4Survivalratesofintrauterine gestationhaveincreasedfrom35%to54%in1970,toabout70% today.4 Talbot et al [11]. mention a substantial improvement in the survival rate, between 48% and 51% in 1957; to 69% in 2007.

Yu et al [8]. carried out a retrospective study where most of the patients had successful perinatal results. 88% of the patients deliveredlivenewbornswithoutcongenitalanomalies,andthreepatients(12%)whounderwentsurgicaltreatmentforremovalofthe ectopicpregnancymiscarried.Lietal[16].Foundanoverallabor- tion rate of 14.8% in the group that was managed surgically [14].

5. Conclusion

Heterotopic pregnancy is a rare obstetric pathology, its diagnosis remains a challenge, it can occur spontaneously or after the useof assisted reproduction techniques, which has increased its incidenceinrecentyears.Ultrasoundisthemostimportanttoolinthe diagnosisandearlyidentificationofheterotopicpregnancies.Laparoscopyremainsthedefinitivemethodofextrauterinepregnancy.

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