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■ Case Report

Three Cases of Heterotopic Pregnancies Managed at The University College Hospital Ibadan in the Last Five Years

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ABSTRACT

The coexistence of extrauterine and intrauterine pregnancy is known as heterotopic pregnancy. The incidence of heterotopic pregnancies may have increased in recent times due to improved diagnostic tools, availability of artificial reproductive therapy among others. High index of suspicion is required to make a diagnosis of heterotopic pregnancy as the presence of intrauterine gestational sac should not rule out ectopic pregnancy but rather raise suspicion in the face of clinical or radiological features of ectopic pregnancy. We present three cases of heterotopic pregnancies managed at the University College Hospital, Ibadan. There was rupture of the ectopic gestation in all cases, diagnoses were aided with ultrasonography, and they were managed with exploratory laparotomy. Excellent maternal outcomes but failure of the intrauterine pregnancy was seen in all cases. Surgical management remains an option of management but may be associated with high rates of failure of intrauterine gestation.

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INTRODUCTION.

Ectopic pregnancy defined as the implantation of the fertilized ovum outside the endometrial cavity is a leading cause of early pregnancy-related mortality. It remains a common gynecological emergency occurring in about 2% of all pregnancies. Heterotopic pregnancy, a rare form of ectopic pregnancy where an intrauterine pregnancy co-exists with an extrauterine gestation, occurs one in 10,000 to one in 30,000 pregnancies.[1] Despite the increasing incidence of ectopic pregnancies, associated mortalities are now reducing due to advancements resulting in early diagnosis and treatments. 1 In regions with a high incidence of multifetal gestation like Nigeria, heterotopic pregnancies may be relatively common, hence there is a need for a high index of suspicion when a patient presents with features suggestive of an ectopic pregnancy although an intrauterine pregnancy is visualized on ultrasound.

This report is a series of three cases of heterotopic pregnancies recently managed at The University College Hospital, Ibadan over five years. They all had ultrasound findings of intrauterine

gestational sac with intraperitoneal collection and/or extrauterine gestational sac. We present here the management of these cases and subsequent outcomes of intrauterine pregnancies.

CLINICAL PRESENTATION.

Case 1

The patient was a 27-year-old Gravida 3 Para 2+0 (2Alive) home manager resident of Ibadan, a Christian of Hausa ethnicity with a Junior Secondary School level of education. Her last menstrual period was 9 weeks before presentation at our facility. She presented with abdominal pain of 14 hours and one episode of syncopal attack. Pain was characterized as being in the lower abdomen and became generalized with worsening severity, thirty minutes before presentation she had an episode of syncopal attack. She had progressive generalized weakness and dizziness. There was no fever, change in bowel habits, urinary symptoms nor abnormal vaginal discharge, or bleeding. She missed two consecutive menstrual periods and suspected pregnancy but has yet to do any pregnancy test nor receive antenatal care. Pregnancy was spontaneously conceived, desired, and planned. She denied the use of any abortifacient and no bleeding from any other orifice.

She attained menarche at 12 years and menstruated for 4 days in a regular 28-day menstrual cycle with dysmenorrhea, and no menorrhagia. Coitarche was 18 18 years old with a history of multiple sexual partners. She denied any history of symptoms suggestive of pelvic infections. She had two uneventful pregnancies 7 years and 5 years earlier resulting in spontaneous vaginal deliveries at term. Both children were alive and well. She had a myomectomy and appendectomy done at a private hospital six months earlier on account of recurrent lower abdominal pain. She had no known chronic medical condition. She was not on any routine drug and had no known drug allergy. She was in a monogamous union with a 30-year-old private security guard with a secondary school level of education.

On examination, she was lethargic, pale, anicteric, afebrile, not dehydrated, nil pedal edema. Her Glasgow's coma sore was 14/15 although she had no sign of meningeal irritation nor focal neurological deficit. Her respiratory rate was 28 cycles per minute with vesicular breath sounds. Her pulse rate was 114 beats/minute; her blood pressure was initially unrecordably low but improved to 90/60mmHg following the commencement of resuscitation with one liter of normal saline. Her abdomen was full with a well-healed Pfannenstiel scar. There was generalized tenderness and guarding, further examination was limited by tenderness. Pelvic examination revealed normal vulva and vagina, bulky and tender uterus, however, tenderness in both adnexa and pouch of Douglas made further pelvic examination impossible. Her hematocrit was 29%, the urine pregnancy test was positive, and the bedside ultrasound scan revealed a viable intrauterine gestation with a crown-rump length of 27.54mm corresponding to a gestational age of 9weeks+4days with increased intraperitoneal fluid collection (images in Figure 1 to 3). A provisional diagnosis of heterotopic pregnancy was made. The resuscitation was continued, as per protocol for hypovolemic shock. She had emergency exploratory laparotomy under general anesthesia and intraoperative findings include hemoperitoneum of about 2litres ruptured left ampullary tubal ectopic pregnancy with 10-week sized soft uterus. The left ovary appeared normal, and the right ovary and tube were buried in adhesion. She had left total salpingectomy and 1.3 liters of the hemoperitoneum was given as an autologous transfusion after appropriate filtration. The post-operative period was uneventful, she was discharged on the third postoperative day. The intrauterine pregnancy continued for another 4weeks before she presented with features of complete miscarriage with no sequelae. She was referred for contraceptive services and pap smear screening.

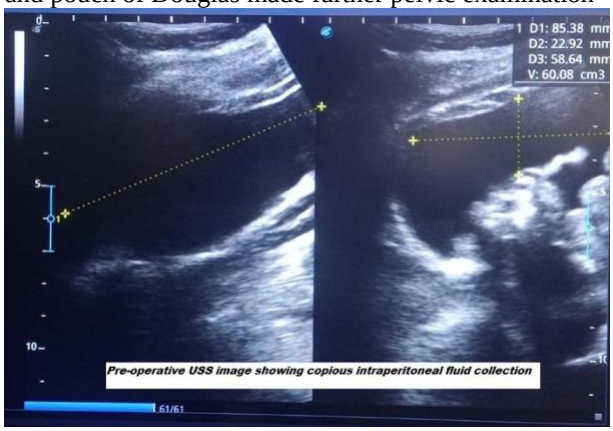

Figure 1

Case 2

The patient was a 35-year-old Gravida 9, Para 1^{+7}(1Alive) Soldier with a secondary school level of education. She resided in Ibadan and was a Christian of Biam ethnicity. She presented the following 10 weeks of amenorrhea with lower abdominal pain for 2 days. Pain was described as a dull ache that progressively worsened, there was no associated history of vagina bleeding, urinary symptoms, or change in bowel habits. Pregnancy was spontaneously conceived, desired and planned, suspected after a missed period, and confirmed with a urine pregnancy test. An ultrasound scan done before presentation showed intrauterine gestation at

8weeks+6days with a co-existing extrauterine gestation at 8 weeks.

She had six spontaneous miscarriages and voluntary termination of pregnancy with no post-abortal sequelae. She attained coitarche at 20 years old with a history of multiple sexual partners but denied any history suggestive of previous treatment for pelvic inflammatory disease. She attained menarche at 12 years and menstruated for 4 days in regular 30-day cycles. She had no history of menorrhagia or dysmenorrhea and had never used any contraceptives nor had a Pap smear. Her past medical history was as documented otherwise not remarkable. She neither smoked nor took alcohol.

On examination, she was a young woman, not in distress, pale, anicteric, afebrile, not dehydrated. Her pulse rate was 88 beats/min, blood pressure 120/80mmHg, and respiratory rate of 20 cycles/min. Her abdomen was obese, moved with respiration with left iliac fossa tenderness. A pelvic examination revealed a normal healthy-looking cervix, and a 12-week uterus with tenderness in the left adnexal. The pouch of Douglas and Adnexa were flat.

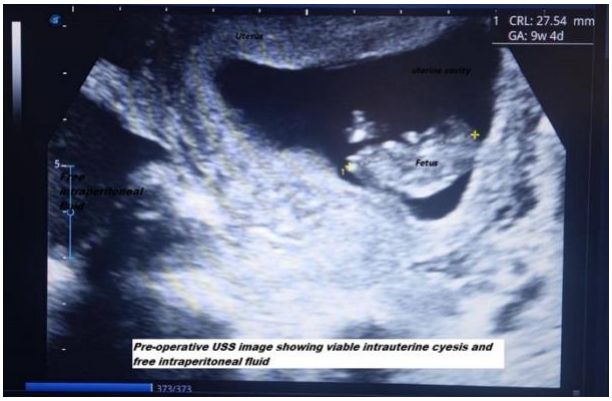

Figure 2

A diagnosis of heterotopic pregnancy with unruptured left tubal ectopic pregnancy was made. She was counseled on the findings and written informed consent was obtained for exploratory laparotomy under regional anesthesia (sub-arachnoid block). Findings include left slow leaking ampullary ectopic pregnancy with 150mls of haemoperitoneum, 12-week sized uterus, and right ovarian cyst. The left ovary and right tube appeared normal. She subsequently had left total salpingectomy total estimated blood loss of 250mLs.

Her post-operative period was uneventful. She was commenced on progesterone support and was discharged home on the 4th postoperative day. She presented 11 days after surgery with abdominal cramps, vaginal bleeding, and an ultrasound finding of incomplete miscarriage which was completed by manual vacuum aspiration. She had no post-abortal sequelae and was counseled on the need for her to present early in her next pregnancy.

Case 3

She was a 36-year-old Gravida 1 Para 0+0 married Farmer, a resident of Ibadan, and a Christian of Yoruba ethnicity, with a post-graduate level of education. She presented after 7 weeks and 5 days of amenorrhea with abdominal pains of 1 day duration. The pain was described as a dull ache limited to the lower abdomen. There was no history of abdominal swelling, vaginal bleeding, urinary symptoms, or change in bowel habits. She had generalized weakness but no dizziness or syncopal attacks.

The pregnancy was desired, planned, and conceived following ovulation induction with clomiphene citrate. She attained coitarche at 25 years old and had multiple partners with unprotected sexual intercourse. She attained menarche at 13 years and menstruated for 3-5 days in a regular 30-day cycle with no menorrhagia or dysmenorrhea. She has never used any contraceptives nor had a Pap smear. Her past medical history was unremarkable. She neither smoked nor took alcohol.

Examination revealed a young woman who was calm, pale, anicteric, afebrile, and not dehydrated. Her pulse rate was 120 beats/min, her blood pressure was 120/80mmHg and her respiratory rate was 30 cycles/min. Her abdomen was mildly distended with generalized tenderness and guarding which limited further examination. Pelvic examination revealed a normal healthy-looking cervix and a bulky uterus with adnexal tenderness limiting further examination.

The initial assessment made was ectopic pregnancy. The pregnancy test was positive, hematocrit was 23%. Ultrasound scan showed increased intraperitoneal fluid and right adnexal heterogenous mass with volume of 306mL and a live intrauterine gestation at 7 weeks, all suggesting a heterotopic pregnancy.

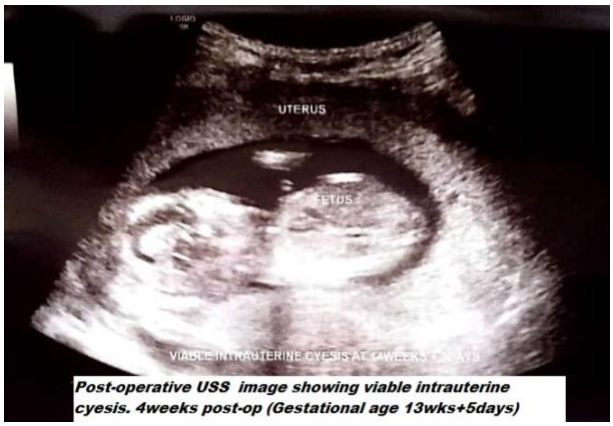

Figure 3

She was counseled on the diagnosis and written informed consent was obtained. She had an exploratory laparotomy under general anesthesia. Findings of 1.8 liters of hemoperitoneum, 14 weeks-sized uterus with multiple fibroids. A ruptured right ampullary ectopic gestation with normal looking left tube and bilateral polycystic ovaries worse on the left were seen. She subsequently had right total salpingectomy, total estimated blood loss at surgery was 2Litres. She had two units of blood transfused peri-operatively. The post-operative period was uneventful, she was discharged on the 3rd postoperative day.

Three weeks later, she presented with abdominal pains, vaginal bleeding with passage of fleshy materials, and an ultrasound finding suggestive of incomplete miscarriage. She subsequently had manual vacuum aspiration to complete the miscarriage. She had no post-abort-al sequelae and was counseled on the need for her to present early in her next pregnancy.

DISCUSSION

Although no identifiable risk factors are present in more than 50% of cases of ectopic pregnancy, risk factors may include tubal infection and blockage, structural and functional tubal blockage, previous pelvic surgeries especially tubal surgeries, ciliary and motility dysfunction, failed contraception as well as[artificial reproductive technology among others.[1–4] There was a history of multiple sexual partners in all the cases presented here although they all denied any history suggestive of pelvic inflammatory disease. Subclinical infections resulting from sexually transmitted diseases may sufficiently cause tubal damage and result in ectopic pregnancy.

Heterotopic pregnancies like ectopic pregnancies are more common with artificial reproductive technologies yet, several cases resulting from natural conception have been reported.[5] Heterotopic pregnancies are as common as 1 in 100 cases of embryo transfer and this may be due to multiple embryo transfers, pre-existing pelvic or tubal disease.[6,7] The incidence may be as high as 1 in 900 with ovulation induction on account of the multiple fertilization associated with multiple ovulation.[5,6,8] Case 3 which was the only primigravida had ovulation induction with clomiphene citrate.

Heterotopic pregnancies may be regarded as twin pregnancies where one embryo implants in the uterus and the other implants outside the endometrial cavity. In South-West Nigeria with the highest incidence of twin gestation globally, heterotopic pregnancy may be expected to occur more frequently and have been widely reported.[8–15] Two of the three cases reported here were spontaneous conceptions that may be likened to spontaneously conceived twin gestation with heterotopic development.

When a woman presents with amenorrhea, abdominal pains, and bleeding per vagina, ectopic pregnancy is a differential diagnosis. Other differentials include threatened miscarriage, hemorrhagic corpus luteum, incomplete miscarriage, etc.[1,3,4] The diagnosis of ectopic pregnancy before rupture is rather uncommon in low-resource settings like Nigeria on account of poor health-seeking behavior and limited access to healthcare services resulting in late presentation in most cases.[9,16] The triad of amenorrhea, abdominal pain, and bleeding per vagina is associated with ectopic pregnancy, where abdominal pain is seen almost always, amenorrhea in 75% of cases, and vaginal bleeding may be seen in about 50% of cases.[17,18] Vaginal bleeding is believed to result from endometrial shedding due to the failing pregnancy. However, in heterotopic pregnancies where there is coexisting viable intrauterine fetus, as was seen in all three cases presented here, vaginal bleeding was absent.[17,18]

The use of ultrasonography in the evaluation of gynecological cases has reduced the morbidity and mortality associated with ectopic pregnancies including heterotopic pregnancies.[1,5] However, the presence of intrauterine gestation may delay the diagnosis of heterotopic pregnancy as it could have happened in these cases. Findings of hypovolemic shock and increased intraperitoneal collection, albeit late features, made the consideration for heterotopic pregnancy possible. If unruptured, diagnosis of heterotic pregnancy may be challenging as the normal intrauterine pregnancy on ultrasound may give a false reassurance.[8,19,20] Thankfully in case 2 despite the absence of hemoperitoneum and hypovolemic shock, ultrasound demonstrated the existence of an ectopic gestation.

Definitive diagnosis of heterotopic pregnancy may require laparoscopy or laparotomy as the adnexal mass or intraabdominal collection could result from some other pathologies such as hemorrhagic corpus luteum cyst and other causes of acute abdomen in pregnancy.[5,21] Heterotopic pregnancy should still be suspected in patients with abdominal pains with ultrasonographic evidence of intrauterine cyesis and it should be noted that transvaginal ultrasound may be more helpful to show intrauterine gestation coexisting with an extrauterine gestation.[8,14] Early diagnosis of heterotopic pregnancy is desirable and is greatly beneficial but in more than half of the cases, the diagnosis is usually not made until laparotomy becomes indicated for therapeutic purposes as witnessed in the cases presented.[22] This explains why the laparoscopic approach and other less invasive interventions are not commonly performed in low-resource settings like Nigeria.[9]

Although cases of heterotopic pregnancies in other sites such as the ovaries and cervix have been

documented, the fallopian tube especially the ampulla region remains the commonest site of ectopic pregnancy as seen in the cases presented here.[5,23] The approach to the treatment of heterotopic pregnancy involving the tube is mostly surgical requiring laparotomy or laparoscopy.[5] Different modalities of laparoscopic intervention have been reported with comparable outcomes yet laparoscopy must be reserved for hemodynamically stable patients.[24] Expectant management and ultrasound-guided aspiration of the ectopic gestation may also be considered in well-selected patients where early diagnosis is made and facilities are available.[22]

In the cases presented here, expectant management or less invasive measures could not be considered as the ectopic gestations had ruptured with hemodynamic instability and the operative finding of massive hemoperitoneum made it evident that laparotomy was the best approach to management. It has been noted that the risk of miscarriage of the intrauterine pregnancy is high with surgical management as compared to ultrasound-guided aspiration.[22] Intralesional injection of toxic agents such as potassium chloride has also been documented but this approach/management option is no longer favored due to the very high incidence of miscarriage during intrauterine gestation.[25]

The possibility of continuation of the intrauterine pregnancy to achieve a livebirth must be fully explored and the patient must be properly counseled about this and the need for adequate monitoring. The intervention for the ectopic pregnancy does not affect the route of delivery which remains as per obstetric indication.[9,10,12] All three cases however had failed intrauterine pregnancies even with progesterone support in Case 2. Failed intrauterine pregnancies following laparotomy for heterotopic pregnancies are common in developing nations where diagnoses are often not made until the patient is hemodynamically unstable.[11] The likelihood of successful live birth for the intrauterine pregnancy is over 90% when the intervention is done before the rupture of the ectopic gestation and younger gestational age at presentation may be associated with higher rates of successful live births.[26,27]

CONCLUSION

These cases of heterotopic pregnancies presented have demonstrated the need for a high index of suspicion of heterotopic pregnancy in patients with features suggestive of ectopic pregnancy despite Ultrasound findings of coexisting intrauterine pregnancy. This is especially important in regions with high incidence of multifetal gestation like in South-West Nigeria, poor health-seeking behavior, and limited resources.

Heterotopic pregnancies may not be as rare as was previously believed, early diagnosis before rupture is desired as less invasive interventions can be considered in early cases. Appropriate intervention as indicated must also be early to reduce possible morbidities and mortalities. Rupture of ectopic gestation with hemoperitoneum and the need for laparotomy may be associated with failed intrauterine gestation as it was in the cases presented here.

REFERENCES

1. Flaih DAF. ECTOPIC PREGNANCY (E.P) RISK FACTORS, DIAGNOSIS AND MANAGEMENT. :10.
2. Bouquier J, Fulda V, Bats AS, Lécuru F, Huchon C. A life-threatening ectopic pregnancy with an etonogestrel implant. Contraception. 2012 Feb 1;85(2):215–7.
3. Gaetani SL, Garbade GJ, Haas SI, Roth KR, Kane KE. A ruptured ectopic pregnancy in a patient with an intrauterine device: A case report. Radiol Case Rep. 2021 Dec;16(12):3672–4.
4. Case of rupture ectopic pregnancy with emergency contraception levonorgestrel 0.075 mg in a lactating woman - Masud - 2021 - Clinical Case Reports - Wiley Online Library [Internet]. [cited 2021 Oct 15]. Available from: https://onlinelibrary.wiley.com/doi/full/10.1002/ccr3.3849
5. MJ G, R R. Heterotopic pregnancy in natural conception. J Hum Reprod Sci. 2008;1(1):37–8.
6. Wallach EE, Tal J, Haddad S, Gordon N, Timor-Tritsch I. Heterotopic pregnancy after ovulation induction and assisted reproductive technologies: a literature review from 1971 to 1993. Fertil Steril. 1996 Jul 1;66(1):1–12.
7. Rojansky N, Schenker JG. Heterotopic pregnancy and assisted reproduction—an update. J Assist Reprod Genet. 1996 Aug 1;13(7):594–601.
8. Archibong EI, Etuk SJ. Case Report; Heterotopic Pregnancy Following Induction of Ovulation. Trop J Obstet Gynaecol. 2002;19(2):115–6.
9. Badejoko OO, Awowole IO, Imaralu JO, Orji EO, Adeyemi AB, Kuti O. Laparoscopic Salpingectomy for Heterotopic Pregnancy: A Case Report from Ile-Ife, Nigeria. J Gynecol Surg. 2013 Apr;29(2):96–8.
10. El–Nafaty AU, Melah GS, Massa AA, Yahaya UR, Bukar M, Kizaya DD. Heterotopic pregnancy in a natural conception cycle. A case report. Niger J Clin Pract. 2005;8(2):128–9.
11. Odewale MA, Afolabi MO. Heterotopic pregnancy: A clinical case report from rural Nigeria. Rural Remote Health. 2008 Jul;8(3):1–4.
12. Ikechukwu E, Adeleni M. Heterotopic pregnancy with a live infant. Ann Afr Med. 2013 Jan 1;12(1):43.
13. Onoh RC, Ejikeme BN, Onwe AB, Asiegbu OU. Ruptured Ectopic in Heterotopic Pregnancy: Management and Spontaneous Vertex Delivery of a Live Baby at Term. Niger J Clin Pract. 2018;21(5):672–7.
14. Spiff AI, Inimgba NM, Jamabo RS. Ruptured heterotopic pregnancy: a case report and brief review of the literature. Niger J Med. 2005 Jul 1;14(3):315–6.
15. Arisukwu O, Olaoye LE, Igbolekwu C, Rasak B. Implications of COVID-19 on Healthcare Seeking Behaviour of the Rural-Poor in Ido-Ekiti and Environs. Nigeria. 2021;

16. Anyanwu M, Titilope G. Ectopic pregnancy at the Gambian Tertiary Hospital. Afr Health Sci. 2021 Apr 16;21(1):295–303.
17. Hiralal Konar. Ectopic Pregnancy; Hemorrhage in Early Pregnancy. In: DC Dutta's Textbook of Obstetrics. 8th ed. India: Jaypee Brothers Medical Publisher; 2015.
18. Ann-Marie Surrette, Samantha Dunham. Early Pregnancy Risks. In: Current Diagnosis and Treatment Obstetrics and Gynecology. 11th ed. United States of America: McGraw-Hill; 2013.
19. Talbot K, Simpson R, Price N, Jackson SR. Heterotopic pregnancy. J Obstet Gynaecol. 2011 Jan 1;31(1):7–12.
20. Bright DA, Gaupp FB. Heterotopic pregnancy: a reevaluation. J Am Board Fam Pract. 1990 Apr 1;3(2):125–8.
21. Barrenetxea G, Barinaga-Rementeria L, Lopez de Larruzea A, Agirregoikoa JA, Mandiola M, Carbonero K. Heterotopic pregnancy: two cases and a comparative review. Fertil Steril. 2007 Feb 1;87(2):417.e9-417.e15.
22. Li JB, Kong LZ, Yang JB, Niu G, Fan L, Huang JZ, et al. Management of Heterotopic Pregnancy. Medicine (Baltimore). 2016 Feb 8;95(5):e2570.
23. Essa S, Ghafel H. Correlation between Ectopic Pregnancy and Reproductive History among Pregnant Women in Karbala City/ Iraq. Kufa J Nurs Sci. 2021 Jun 29;11(1):1–7.
24. Rezai S, Giovane RA, Minton H, Bardawil E, Zhang Y, Patil NM, et al. Laparoendoscopic Single-Site Surgery for Management of Heterotopic Pregnancy: A Case Report and Review of Literature. Case Rep Obstet Gynecol. 2018 Jul 4;2018:e7232637.
25. Fernandez H, Lelaidier C, Doumerc S, Fournet P, Olivennes F, Frydman R. Nonsurgical treatment of heterotopic pregnancy: a report of six cases. Fertil Steril. 1993 Sep 1;60(3):428–32.
26. Li J, Luo X, Yang J, Chen S. Treatment of tubal heterotopic pregnancy with viable intrauterine pregnancy: Analysis of 81 cases from one tertiary care center. Eur J Obstet Gynecol Reprod Biol. 2020 Sep 1;252:56–61.
27. Lyu J, Ye H, Wang W, Lin Y, Sun W, Lei L, et al. Diagnosis and management of heterotopic pregnancy following embryo transfer: clinical analysis of 55 cases from a single institution. Arch Gynecol Obstet. 2017 Jul 1;296(1):85–92.