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Live birth after *in vitro* fertilization (ivf) in a 53 year old woman: A case report

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ABSTRACT

To report a case of live birth in a 53 year old woman following assisted reproductive techniques (ART). A 53-year-old civil servant who registered for antenatal care at the University of Port Harcourt Teaching Hospital (UPTH) in 2008 at 17 weeks gestation is presented. She had conceived after 4 years of infertility follow treatment by intracytoplasmic sperm injection/embryo transfer (ICSI-ET) using her husband's sperm and donor eggs. The pregnancy was complicated by breech presentation at term. She was delivered of a healthy live male infant by elective caesarean section at 38 weeks of gestation. The puerperium was complicated by hypertension, which was managed appropriately. Infertility in women of advanced reproductive age can be successfully treated with donor oocytes in Nigeria. Antenatal supervision and delivery by skilled attendants is the key to achieve favourable outcome.

1. Introduction

Owing to the growing tendency of women to delay child bearing plans because of career and personal priorities, fertility specialists today are seeing more and more age related fertility problems[1]. In developing countries like Nigeria, infertile women seek expert care late because they would have sought unorthodox treatment at homes of traditional caregivers, spiritualists and churches[2].

There is a natural age related decline in fertility in women. Older age seems to have an adverse effect on different stages of Assisted Reproductive Techniques (ART). It is associated with a reduced response to controlled ovarian hyperstimulation and a higher percentage of aneuploidy and degenerative oocytes resulting in lower fertilization cleavage and implantation rates. Thus, there is a progressive decline in delivery rates in older women undergoing IVF[3,4].

Oocyte donation provides an opportunity for women to successfully conceive regardless of their age thereby overcoming the effect of age on fertility. However even amongst women who receive donated eggs, pregnancy rates are lower in women aged 40 years and above[5,6].

There is a higher risk of miscarriage and also age related pregnancy complications in advanced maternal age pregnancy of which fetal abnormality, risk of gestational diabetes mellitus and pre eclampsia are just a few[7]. It is imperative that professionals manage these women to achieve favourable outcomes of the pregnancy as in the case reported.

2. Case report

Mrs. CA was a 53-year-old nulliparous civil servant who registered for antenatal care at the University of Port Harcourt Teaching Hospital (UPTH) on 14th October 2008. She had conceived the pregnancy following treatment with intracytoplasmic sperm injection of husband's sperm into 7

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viable eggs recruited from a 24-year-old donor at a private IVF clinic. (The Bridge Clinic, Port Harcourt) The 7 eggs fertilized and cleaved. Three of the seven embryos were transferred on 26th June 2008, 48 h after ICSI was done. The embryos transferred were of the following grades: two 4 cell (grade 1) and one 6 cell (grade 2).

Pregnancy was diagnosed by positive serum and urinary beta human chorionic gonadotrophin (hCG) 14 d after embryo transfer. Her expected date of delivery was 19th March 2009 and her gestational age at presentation was 17 weeks. She had received progesterone support with 400 mg cyclogest pessaries daily for the first 16 weeks of pregnancy. She also had progynova (estradiol valerate) for endometrial regeneration prior to embryo transfer and up to 16 weeks of pregnancy.

She was three years postmenopausal with markedly elevated gonadotrophins and had no antral follicles at the evaluation done prior to IVF treatment. She had myomectomy done in 2004. She had three previous terminations of pregnancy prior to her marriage. She was married to a 51-year-old teacher and they had secondary infertility of four years duration. Her mother was hypertensive and her father diabetic.

On examination at her registration for antenatal care, she was neither pale nor jaundiced. Her blood pressure was 110/60 mmHg and pulse was 90 beats per minute. Her chest was clinically clear and her heart sounds were normal. There was a midline subumbilical scar and her uterus was 20 weeks size. Bimanual vaginal examination revealed normal findings. The diagnosis was midtrimester gestation from assisted conception in an advanced maternal age nullipara. An ultrasound scan confirmed a viable singleton fetus at 17 weeks gestation with no gross congenital malformation.

She attended antenatal clinic regularly and received haematinics, malaria chemoprophylaxis and tetanus immunoprophylaxis. The fetal presentation was breech from 30 weeks till term and she had an elective caesarean section at 38 weeks gestation. A live male baby with Apgar scores of 5 and 8 at the 1st and 5th minute was delivered with a paediatrician in attendance. He weighed 2.65 kg. She developed post partum hypertension, which was controlled with oral nifedipine and alpha methyl dopa as instituted by the physicians. She was discharged on the 8th day post operation. At her postnatal visit, she was healthy, her blood pressure was normal, her baby was being breast fed exclusively and weighed 4.73 kg.

3. Discussion

There is a progressive decline in delivery rates in women of advanced reproductive age undergoing IVF and indeed with spontaneous conception hence this case report. Pregnancies after IVF have been reported in women aged greater than 40 years but there are few reports of the a delivery of healthy child after the age of 47 years either with the use of homologous oocytes or following spontaneous conception^[4,8,9].

As more women are delaying child bearing for career and personal priorities, more women are being seen by fertility specialists for age related infertility issues. This is compounded by the delay in developing countries from women seeking unorthodox treatment for their infertility in various places before seeking specialist care^[2,10]. Present reports reveal that greater than 12.3% of women attending IVF clinics are greater than 40 years of age^[11].

The quality/quantity of the oocyte and the impairment of implantation as a result of reduced vascular perfusion of the ageing uterus are factors militating against the establishment of pregnancies in older women. Which factor has a more negative effect is still being debated^[12,13] however what is certain is that the best option for achieving pregnancy for the aged infertile woman is oocyte donation^[5,14].

ART is increasingly being accepted as a modality for treatment in Nigeria after an initial resistance^[15]. There is also an increase in the use of donor gametes. This is the first report in literature from Port Harcourt and Nigeria of a pregnancy successfully ending with the delivery of a live baby after oocyte donation in a woman in her fifties. It is indeed an extra ordinary event thus it is usually reported when it occurs even in the newspapers^[16–18].

The donation of oocytes to older women raises many medical, social and ethical issues leading to age limits for treatment of infertile women in some countries^[19] but it is invariably needed by women with premature ovarian failure or severe genetic disorders, those who respond poorly to ovarian hyper stimulation and postmenopausal women as in the reported case.

Objections to pregnancy in older women are due to medical risks for the mother and child, the application of fertility treatments beyond the natural reproductive age and the psychological consequences for the child. These risks include but are not limited to higher rate of miscarriages, fetal abnormality, gestational diabetes mellitus, hypertensive

disorders, preterm delivery, lower birth weights, higher rate of caesarean sections and even maternal death^[17–20]. There is also the issue of early deaths of these mothers from other age related diseases such as cancer leaving the children orphans^[21]. The case reported developed postpartum hypertension and may have had adverse outcome if not for the prompt treatment.

This case report although coming after approximately 18 years of similar reports in developed countries highlights the advancement of ART in Nigeria and indeed Sub-Saharan Africa where infertility is such a huge burden that women go to any lengths to achieve a pregnancy. It proves that women in their sixth decade of life and menopausal can achieve pregnancy and delivery with the aid of oocyte donation. However, the women must be counseled on the risks of pregnancy at an advanced age and encouraged to seek professional expert care in modern tertiary care centres.

Conflict of interest statement

The authors report no conflict of interest.

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