



# International Journal of Comprehensive Nursing

ISSN: 2349 - 5413



## Chemical Pregnancy – A Case Report

Vijayalakshmi Ravi<sup>1</sup> \* and Beulah Jayaselvi<sup>2</sup>

<sup>1</sup>Associate Professor, Omayal Achi College of Nursing, Puzhal, Chennai, Tamil Nadu 600 066.

<sup>2</sup>Assistant professor, Omayal Achi College of Nursing, Puzhal, Chennai, Tamil Nadu 600 066.

### ARTICLE INFO

#### Article History:

Received 05 November 2014

Received in revised form 12

November 2014

Accepted 20 November 2014

Available online 30 November 2014

#### Key words:

Chemical pregnancy, Miscarriage, Gestation, Endometrium.

### ABSTRACT

Chemical pregnancy is a clinical term used for a very early miscarriage. It happens before the 5th week of gestation. This occurs when an egg is fertilized but it does not implant on the uterine wall. Chemical pregnancies are actually quite common, occurring in 50 - 60% of first pregnancies. Often, a chemical pregnancy goes unnoticed, and appears to be just a late period.

### Case Scenario

Mrs. M, a young female came with the complaints of nausea, vomiting and abdominal pain. She was suspected to be pregnant and was sent for investigation in routine manner. Her Last menstrual Period (LMP) was 19/3/13, her urine pregnancy test was done on 24/4/13 and reported as positive. She was started on Folic acid 5mgs a day and was advised to continue until pregnancy was over. She was seen by a gynecologist and advised UltraSonoGraph (USG) which revealed thickened endometrium (15.6mm) with no evidence of gestational sac. Beta HCG level was 3634.17mIU/ml.

The Urine test for pregnancy repeated after a week was negative. Beta HCG level came down to 834.17mIU/ml. Repeat USG revealed bulky uterus with thickened endometrium. She had vaginal bleeding for six days subsequently.

This case is suggestive of so called “**Chemical Pregnancy**”

### Chemical Pregnancy

Chemical pregnancy is a condition which is characterized by transiently positive HCG level not associated with the development of an embryo or even a gestational sac<sup>1</sup>. A fertilised egg or a pregnancy produces a hormone called HCG i.e. Human Chorionic Gonadotropin. The level of HCG hormone in the blood determines the health of the egg. Once the level of this hormone in the blood crosses a particular level, it is detected in the urine; this is when a urine pregnancy test results positive. It usually happens within one-two days of missing the periods. However, in the case of a chemical pregnancy, the level of HCG in the blood keeps going down as the process of pregnancy has stopped<sup>2</sup>.

A pregnancy test can be positive as early as the first days of the approximate time of implantation or when traces of HCG are detectable in the maternal serum. It has been established that as many as 25% of pregnancies fail even before the woman has any subjective indication that she is pregnant, that is, before she misses her menstrual period<sup>3</sup>.

In the general population, most chemical pregnancies go unrecognized. Chemical pregnancies are diagnosed under active monitoring for pregnancy only if HCG levels are tested prior to a missed menstrual period.

\*Corresponding author.

Email address: vijjadi2006@yahoo.com

Vijayalakshmi Ravi and Beulah Jayaselvi, Chemical Pregnancy – A Case Report, IJCIN, 2014, 1(6):1-3.

Chemical Pregnancy	Miscarriage
Very early pregnancy loss, characterized by a positive pregnancy test (hCG) that is not maintained. A chemical pregnancy never reaches the stage where a gestational sac is seen on ultrasound examination.	Loss of a clinical pregnancy, i.e., a pregnancy loss after the fetus has reached a stage that is visible on ultrasound examination.

### Difference between Miscarriage and Chemical Pregnancy

Any unwanted, spontaneous pregnancy loss prior to the 20th week of pregnancy is considered a miscarriage. Miscarriages are a relatively common occurrence, affecting nearly 15% of all pregnancies.<sup>4</sup>

### Differential Diagnosis

The American Society of Reproductive Medicine and the Society for Assisted Reproductive Technology<sup>5</sup> distinguish chemical pregnancies from clinical pregnancies, which include spontaneous abortions. The transient rise in HCG that characterizes a chemical pregnancy is distinct from the widely recognized outcomes of a clinical pregnancy, which include spontaneous and induced abortions, ectopic pregnancy, and delivery. In the absence of routine use of ultrasound, a chemical pregnancy could be defined by the combination of a low peak in HCG (<100 mIU/mL), rapid fall in urinary or serum HCG concentration, and lack of substantial delay in onset of the next menstrual period to help differentiate this entity from a clinical pregnancy.

### Causes

The exact causes for a chemical pregnancy are very difficult to determine but majority of the chemical pregnancy losses or miscarriages happen because of chromosomal abnormalities in the embryo which might be caused by poor sperm or, more often, poor egg quality, or by abnormal genes in the man or woman. The remaining known reasons for early losses include failure of the embryo to implant normally in the uterine lining. This may occur for a variety of reasons, including:

- The progesterone hormone did not increase enough after ovulation to prepare the lining for implantation.
- The lining did not thicken normally although the progesterone level was normal.
- There are abnormalities in the lining such as a fibroid tumor, scar tissue or a dividing septum that interfere with the embryo attaching itself to the lining.

### Prevention and treatment

Since the vast majority of chemical pregnancies go unnoticed, there are relatively few people who undergo treatment for the condition. Instead, most of these women go on to experience healthy, full-term babies in the future.

Women who are found to have specific causes for their chemical pregnancies may receive certain treatments in order to increase the chances of pregnancy. Common treatments include:

- √ fibroid surgery
- √ hormones
- √ baby aspirin

### Prevention

One vital step is to get as healthy before conceiving to provide a healthy atmosphere for conception to occur.

- ◆ Exercise regularly
- ◆ Eat healthy
- ◆ Manage stress
- ◆ Keep weight within healthy limits
- ◆ Take folic acid daily

**Conflict of Interest: Nil**

**References**

1. Wang X, Chen C, Wang L et al. Conception, early pregnancy loss, and time to clinical pregnancy: a population-based prospective study. *Fertil Steril* 2003;79(3):577-584.
  2. Gracia CR, Sammel MD, Chittams J, Hummel AC, Shaunik A, Barnhart KT (2005). "Risk Factors for Spontaneous Abortion in Early Symptomatic First-Trimester Pregnancies". *Obstetrics & Gynecology* **106** (5, Part 1): 993–9.
  3. Everett C (1997). "Incidence and outcome of bleeding before the 20th week of pregnancy: Prospective study from general practice". *BMJ* **315** (7099): 32–4.
  4. Tabor A, Alfirevic Z (2010). "Update on procedure-related risks for prenatal diagnosis techniques.". *Fetal diagnosis and therapy* **27** (1): 1–7.
  5. Storck, Susan (2012-11-08). "Miscarriage". National Institute of Health. Retrieved 2013-09-01.
  6. Kajii T, Ferrier A, Niikawa N, Takahara H, Ohama K, Avirachan S (1980). "Anatomic and chromosomal anomalies in 639 spontaneous abortuses". *Human Genetics* **55** (1): 87–98.
  7. Vilma Ruddock, What Is a Chemical Pregnancy? Online article accessed via <http://pregnancy.lovetoknow.com/pregnancy-problems/what-is-chemical-pregnancy>.
-