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CASE REPORT

Biochemical Pregnancy with True Gestational Symptoms - An Uncommon Condition

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ABSTRACT

In biochemical pregnancy, an embryo attaches to the uterus and releases the hormone human Beta Chorionic Gonadotropin, but fails to progress. This type of pregnancy does not progress into a clinical pregnancy because menstrual bleeding starts shortly after the positive reading, even before an ultrasound could confirm a pregnancy, which is typically around 5-6 weeks.

The case presented displays the typical features of a biochemical pregnancy.

Keywords: Pregnancy; Gonadal Hormones; Chorionic Gonadotrophin; Dilatation & Curettage.

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INTRODUCTION

A conception with measurable Beta Human Chorionic Gonadotrophin (β-hCG) levels that does not develop enough to be seen on ultrasound, is said to be a biochemical or chemical pregnancy.[1] A biochemical pregnancy is in fact a real pregnancy but ends prior to 6th gestational week.[2,3] In such cases, implantation of embryo takes place and the secretion of pregnancy hormone i.e. β-hCG starts and can be detected in maternal blood.[2] Unfortunately biochemical pregnancy does not proceed to clinical pregnancy and terminates by itself.[4]

In the very early phase of pregnancy, women do not look pregnant, and if ultrasonography is performed, it will not show evidence of pregnancy. This period is called the biochemical phase because at this stage the only way to confirm pregnancy is by doing biochemical blood and urine tests. With rare exceptions, pregnancy is the only time when β-hCG is secreted into the blood. Initially the level of β-hCG is very low but as pregnancy proceeds, the level starts rising significantly. In multiple pregnancy, the levels usually rise faster as compared to a single pregnancy, in which the levels of beta hCG rises by roughly doubling every 48-72 hours.[2] This is known as the "doubling time" and can help in early diagnosis of an eventual miscarriage or an ectopic pregnancy.[5] After a week or two of positive pregnancy test, an intrauterine gestational sac and a fetal pole can be confirmed by transvaginal ultrasound. The presence of an intrauterine gestational sac is defined as clinical pregnancy.[6]

In biochemical pregnancy, women have almost no signs and symptoms of normal pregnancy; this is considered the main difference between the two.[7] Some women may experience only mild menstrual type of abdominal cramping and later on bleeding which is mostly confused with the start of menstrual cycle. That is why most biochemical pregnancies remain undetected while detected ones are just showing the tip of iceberg. Biochemical pregnancy and early miscarriages usually occur within the first six weeks of pregnancy. The possible causes of biochemical pregnancy are:

- A chromosomal or genetic abnormality that prevents the proper formation of an embryo.
- A uterine abnormality that interferes with implantation, including fibroids and infections.
- A hormonal deficiency that renders pregnancy very difficult.[8,9]

CASE REPORT

A 24 years old patient came to the Out Patients Department (OPD) of Lady Reading Hospital, Peshawar, Khyber Pakhtunkhwa, with complaints of nausea, fatigue ability, mastalgia and mild lower abdominal pain. On inquiring about her menstrual history, she was found to be 10 days overdue. Her urine pregnancy test (UPT) was done by a test strip to detect β-hCG which showed positive result but test line was very weak as compared to the control line. Her blood beta hCG levels were also evaluated and found slightly higher than normal. After a week she visited again because of absence of the gestational symptoms which were present initially. She was advised to do blood β-hCG levels and ultrasonography. Her blood β-hCG level had declined compared to the previous report and no gestational sac was found on both abdominal as well as transvaginal ultrasound. A diagnosis of biochemical pregnancy was made. Patient was advised to wait for spontaneous menses which came after a week time but a bit heavier than the regular cycle.

DISCUSSION

According to the American College of Obstetricians and Gynecologists (ACOG), chemical pregnancies account for 50–75 percent of all miscarriages. In contrast to other miscarriages, which classically happen before the 20th week of pregnancy, biochemical pregnancies mostly occur a week or two after implantation. As biochemical pregnancy ends very early, mostly women are unable to even appreciate that they have conceived.[10] Therefore the only confirmation of their conception is the pregnancy test that comes positive.[11,12]

In biochemical pregnancy, the sperm reaches the egg and fertilizes it, resulting in embryo formation and later on implantation in the endometrium. This is the time when β-hCG hormone starts synthesizing.[13] But after a few days β-hCG level starts declining and the urine test turns negative, indicating the end of biochemical pregnancy. If a young female conceives spontaneously but experiences a chemical pregnancy loss, she must be investigated for any likely cause. However, if the investigation does not show any obvious cause, then the chances of normal pregnancy is very high. Research has shown that many women have successful pregnancies after a biochemical pregnancy.[5]

Generally, there is no specific treatment for biochemical pregnancy. In most of the cases uterine contents are expelled spontaneously and naturally. However, if it does not happen then dilatation and curettage (D&C) may be needed. If the uterine contents are not removed then it may cause harm to the health and safety of the patient. A course of antibiotics can be given if infection is suspected to be the cause of biochemical pregnancy.[14]

Though mostly women who undergo a biochemical pregnancy are unaware of their pregnancy but those who come to know about it, may suffer from severe depression. Such patients need proper care and counselling especially during the initial days of pregnancy loss. Counselling will help the patient to get out of her grief, which will lessen the stress she may be going through and will also help her to conceive again.

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