Early miscarriage guidelines should be improved, researchers say

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Photo by Bianca de Blok.

Researchers are calling for improvements to the way early miscarriage is diagnosed following a new study published today in the *BMJ*.

An accurate diagnosis is vital since a misdiagnosis could result in a healthy pregnancy being inadvertently terminated. The current standard for diagnosis may require a single ultrasound scan or two scans with the second occurring after a seven days.

The new study, by researchers at Imperial College London, shows that if women with a suspected miscarriage are offered two scans up to 14 days

apart, then doctors can be confident that their diagnosis is correct.

Miscarriage is quite common in the first three months of pregnancy and in the UK, pregnant women who experience pain or bleeding in the first trimester are usually referred to an early pregnancy clinic, where they are given an ultrasound scan. In some cases, ultrasound diagnosis brings the devastating news that there has been a miscarriage. However, Professor Tom Bourne from Imperial College London says that even with improved guidelines introduced in 2011, there is still a possibility that women are being wrongly diagnosed.

After miscarriage is diagnosed, a woman and her doctor can choose to wait and let the miscarriage progress naturally, or choose a medical or surgical intervention to speed up the process, and for that reason, accuracy is vital.

Professor Bourne, from Imperial's Department of Surgery and Cancer, said: "Women should be able to rely on a diagnosis of miscarriage. It's an area of medicine where the highest levels of caution are warranted."

Under current criteria, miscarriage may be diagnosed on a single ultrasound scan based on measurements of either an empty gestational sac or an embryo where a heartbeat has not been visualised.

These criteria, set in 2011, were based on another study by Professor Bourne and his team, which raised the possibility that some women were being wrongly diagnosed with miscarriage.

These guidelines have already greatly reduced the risk of misdiagnosis, but the new research based on a study of 2845 women, shows that they could still be improved.

Professor Bourne said: "Just one misdiagnosis of miscarriage is too

many. Although we have shown some aspects of the current guidelines are very good, our new study provides us with better data to guide clinicians and improve diagnostic accuracy."

The women in the study attended early pregnancy clinics across London because of pain, bleeding, severe morning sickness or because they had previously experienced miscarriage or an ectopic pregnancy.

All the women had scans which suggested the viability of the pregnancy was uncertain, and were asked to return after seven to 14 days for a second scan to determine whether the pregnancy was a miscarriage or an ongoing viable pregnancy.

The research confirms that criteria used to diagnose miscarriage on an initial scan are safe, but current guidance on when to repeat scans and what might be seen on such scans is not reliable and may lead to misdiagnosis. For example, repeating scans in seven days as in the current NICE guidance was associated with a false positive rate approaching two per cent.

The authors recommend waiting up to 14 days in some cases before repeating a scan to decide if a pregnancy has miscarried. They also show that the gestational age of the pregnancy is important in obtaining an accurate diagnosis. Gestation sacs or embryos that are of uncertain viability on an initial scan are much more likely to miscarry if the gestational age is later, for example more than 10 weeks.

The authors' recommendations mean that women may have to wait longer before knowing whether their pregnancy has miscarried or not. The team acknowledge this will cause anxiety, but say that clinicians need to explain to women at the first scan why they may not be given a firm diagnosis, and doctors should manage expectations by giving a realistic indication of the likely outcome at a follow-up scan. "Managing

expectations is really important," says Professor Bourne.

Researchers are calling on NICE and the Royal College of Obstetrics and Gynaecology to update the guidelines for diagnosing miscarriage. Professor Bourne said: "We would also like to see updated guidelines complemented by improved patient information so that women know that being told they need a second scan is not a reflection of the quality of the first scan, but a necessary failsafe to ensure misdiagnosis cannot occur."

More information: 'Defining safe criteria to diagnose miscarriage: prospective observational multicentre study', Bourne et al, The *BMJ*, www.bmj.com/cgi/doi/10.1136/bmj.h4579

Editorial: Diagnosing a miscarriage: www.bmj.com/cgi/doi/10.1136/bmj.h4769

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