

## **"Peek-a-Boo, I See You": Obstetric Ultrasound**

By Elaine Stillerman, LMT

Expectant mothers ask for it by name. They often can't wait to get to their obstetricians to "see" how their babies are growing. A remarkable diagnostic tool called ultrasound enables mothers and doctors to peek into the mysterious world of the life and growth of the fetus in-utero.

But is it safe and accurate? Are women being protected, or are they being offered a false sense of security about the health of their babies? And what about this burgeoning business of keepsake images and videos of unborn babies? Are eager mothers courting danger with this unnecessary exposure to ultrasound radiation?

Originally developed during WWII to help the military detect enemy submarines, this technology wasn't used in clinical obstetrics until the early 1960s. The use of ultrasound has now become a routine practice in prenatal care in most industrialized countries. Ultrasound uses ultra-high frequency sound waves that bounce off internal structures to produce images (sonograms) of organs, tissues, blood flow, or, in obstetric instances, the developing fetus. According to the Food and Drug Administration (FDA), there are legitimate medical reasons to use this prenatal test: to confirm pregnancy, assess fetal age, diagnose any fetal abnormalities or birth defects, evaluate the position of the placenta, and determine whether there are multiple pregnancies. Generally speaking, when a trained professional administers the test, it is assumed that its benefits outweigh any risks; however, some experts feel that even medical application of obstetric ultrasound has not been fully tested and is not without risks.

There is a lack of epidemiological studies on the risk of ultrasound on human fetuses, although animal studies have shown altered growth, low birth weight, diminished immune response and a deviation in genetic material from high doses of ultrasound. Studies on humans exposed to ultrasound have shown some serious side-effects, including pre-term labor or miscarriage, low birth weight, delayed speech, and fewer instances of right-handedness, which is viewed as brain damage to the developing brain. According to some doctors, ultrasound has its place in clinical diagnosis but not during pregnancy. Many physicians are losing

their ability to confirm gestational age through a bimanual examination because they rely so heavily on technology, and medical schools rarely teach this palpatory skill.

Other concerns about the medical use of ultrasound include different powers of energy emanating from the equipment itself (the machines are becoming more powerful and there is inadequate data or control on levels of output) and the misreading of these tests by technicians or doctors. A study conducted on the accuracy of ultrasound at a major women's hospital in Brisbane, Australia, showed that ultrasound missed almost 40 percent of fetal abnormalities. Many genetic and physical disabilities, such as Down Syndrome, or heart and kidney disease, cannot be picked up from an ultrasound. False positives (an abnormality is detected when it does not exist) may occur, and uncertain interpretations can be extremely stressful for the expectant couple.

There are other serious considerations. The number of elective scans is increasing as doctor's routinely use the test at many prenatal visits, sometimes exposing their patients - and fetuses - to periods as long as one hour. The traditional transabdominal scan is now being replaced with the transvaginal scan, which probes even closer to the growing fetus. New developments, including the Doppler ultrasound, 3-D ultrasound and even 4-D (moving or dynamic 3-D) scanners are currently available to women.

The 3-D ultrasounds are also referred to as "entertainment scans" and provide clearer pictures of the fetal face and movements. What is of greater concern is that the technicians who perform these entertainment ultrasounds are neither regulated nor certified by the states where they do business. Appealing to their emotions, expectant parents are being courted by a number of new companies who claim that this 3-D technology is safe and can offer them the chance of a lifetime to photograph and video their unborn child (doctors use 2-D imaging.) They claim that these pictures help couples bond early with their babies. For a fee of about \$80 for a short session, couples can learn the baby's gender. For \$300, a half-hour session (exposure) will record fetal movements on a videocassette or DVD; color photos are included in this package. The recommended gestational age is between 28 and 32 weeks for the "cutest" images.

The FDA strongly cautions against the use of ultrasound for these keepsake memories. They insist that nonmedical use of ultrasound is not a wise idea. The FDA also regulates medical equipment and is trying to crack down on the "entertainment" use of ultrasounds. Along with the FDA, the American Institute of Ultrasound in Medicine and the European Committee for Medical Ultrasound agree that the nonmedical use of ultrasound must be discouraged and that the use of 3-D ultrasound for psychosocial or entertainment purposes is inappropriate and contrary to responsible medical care.

The use of a diagnostic ultrasound during pregnancy may provide some valuable information about the well-being of the fetus. It can also be emotionally comforting to see the fetus' heart beat. But the advance of technology needs to be kept in perspective and in the safe hands of those qualified to use it.

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