Keepsake Prenatal Ultrasound: Pros and Cons of Non–Medically Indicated Imaging

William Goodnight, Nancy Chescheir

Having a prenatal ultrasound is usually an enjoyable event that combines medical care and family celebration. Ultrasound imaging is often performed during a prenatal exam to confirm gestational age, to screen for fetal abnormalities, and to assess other aspects of fetal well-being. However, ultrasound is sometimes performed when it is not medically indicated. Patient demand for “keepsake” prenatal images has arisen because of a confluence of factors: 4-dimensional (4D) imaging now allows sonographers to capture 3-dimensional (3D) images in real time; the mother may want to “show” her baby to family members who are not present during the medical exam; and practitioners are sometimes reluctant to provide copies of ultrasound images because of medicolegal concerns. Thus, commercial 3D/4D ultrasound studios are becoming increasingly common.

Elective prenatal ultrasound has been promoted as a means of enhancing parent-child bonding. Although studies have not shown 3D/4D ultrasound to be any more effective than 2-dimensional ultrasound when it comes to improving bonding scores or reducing parental stress and anxiety [1], elective ultrasound sessions may allow greater involvement of siblings and other family members and may provide more time for the ultrasound than would be possible in a busy sonography unit.

Retail fetal imaging may provide some benefits, but there are also real concerns. Although many ultrasound boutiques employ certified obstetrical sonographers, there is no requirement that these sonographers be certified, nor is there any formal oversight of these units. For example, one company that supports prospective owners in establishing an elective 3D/4D ultrasound business claims that, with their program, 3D/4D ultrasound training can be completed in “around 5 days” for those with no ultrasound experience [2]. In contrast, the education of a certified obstetrical sonographer typically includes 12–48 months of didactic and clinical training in an accredited program, culminating in completion of a credentialing exam [3]. In addition to training sonographers in proper techniques for obtaining fetal images, this education also covers the physics of ultrasonography, the pathophysiology of fetal disorders, and safe use of medical ultrasound. Most clinical obstetrical units also obtain certification from the American Institute of Ultrasound in Medicine (AIUM) for the performance of obstetric ultrasonography. Such certification assures appropriate unit quality and safety, physician oversight and interpretation, and adherence to medical society guidelines. Retail ultrasound facilities lack this certification, which may lead to inconsistent quality of imaging and inconsistent safety practices.

The primary medical harm that can result from ultrasound imaging is incorrect diagnosis, and there is concern about both false-positive and false-negative results. In obstetrical practices, qualified medical professionals review the images obtained during ultrasound exams, and the results are reported to the care provider. In contrast, images obtained in retail boutiques are not reviewed, and there is no communication with the patient’s obstetrical provider. If a keepsake ultrasound does identify a problem, women may have to wait for referral to a clinical obstetrical ultrasound unit, which could lead to significant anxiety. Another concern is that customers may not understand that a keepsake ultrasound does not provide the same information as a diagnostic ultrasound, and they may thus forgo needed prenatal visits.

Obstetrical sonography has an excellent safety record, and it may seem disingenuous for physicians to argue that keepsake sonograms expose the fetus to biophysical harm, while at the same time promoting the safety of medically indicated ultrasound. But it is important to keep in mind that certified sonographers and ultrasound protocols mitigate the risk of biophysical harm by using power settings and exposure times that are “as low as reasonably achievable” (ALARA) [4-6]. Greater intensity or longer exposure
could induce tissue heating and cavitation, which might have adverse fetal effects. Keepsake ultrasounds may include prolonged imaging of the fetal face, which can be seen as a violation of the ALARA principle.

In response to these concerns, the US Food and Drug Administration (FDA) and medical societies have issued statements and regulations regarding “entertainment” ultrasounds [7-10]. The FDA considers keepsake ultrasounds to be an unapproved use of a medical device and states, “exposing the fetus to ultrasound with no anticipation of medical benefit is not justified” [7]. Similarly, the AIUM states that fetal ultrasound should be performed by appropriately trained and credentialed medical professionals with specific training in fetal ultrasound and that all studies should be properly documented in the patient’s medical record [10]. To address providers’ concerns about medicolegal risk while balancing patients’ desires for keepsake images, the AIUM and other societies suggest that it is appropriate to share images taken during an indicated examination with the patient.

Prenatal ultrasound is an excellent diagnostic tool, and its use can contribute to a mother’s bonding with her unborn child. However, performance of prenatal ultrasound solely for the purpose of gender determination or for the acquisition of keepsake images is discouraged. Obstetrical ultrasound providers could better serve patients by providing copies of digital or print images obtained during clinically indicated imaging. If women choose to go to a retail ultrasound vendor, they should know that a keepsake ultrasound is not a medical test and does not replace a clinically performed scan, and they should be advised to inquire about the credentials of the individuals performing the scan.

References

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Address correspondence to Dr. William Goodnight, UNC–Chapel Hill School of Medicine, 3010 Old Clinic Bldg, CB #7516, Chapel Hill, NC 27599-7516 (william_goodnight@med.unc.edu).

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William Goodnight, MD, MSCR assistant professor, UNC Maternal-Fetal Medicine, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

Nancy Chescheir, MD professor, UNC Maternal-Fetal Medicine, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

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