Evaluation of the placenta using 3D ultrasound and a context-preserving rendering technology.

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Objectives
The sonographic appearance of the placenta is normally homogenous throughout the second trimester. A variety of abnormalities in placental echotexture have been described. While some are considered harmless, others may be pathologic and associated with adverse clinical outcomes. We retrospectively evaluated placental volume data sets of various placental morphologic variants using a context-preserving rendering technology (Crystal Vue).

Methods
Placental volumes from a series of 19 cases were analyzed using a context-preserving rendering technology (Crystal Vue). This technology allows easier differentiation between tissues with different echogenicity by enhancing contrast. Amongst other placental findings the cases included, placental lakes, heterogeneous thick "jelly like" placenta, echoic cystic lesions and hyperinflated placenta. A comprehensive morphologic and Doppler evaluation of the fetus and the uteroplacental circulation was performed. The pregnancy course and outcomes of the present series were analyzed.

Results
In our study context-preserving rendering technology was applied to placental volumes in all cases of placental textural findings/abnormalities. Crystal Vue demonstrated clearly different rendered texture patterns of the varying subtypes of the placental morphology.

Conclusion
In addition to standard 2D ultrasound context-preserving rendering technologies such as Crystal Vue might be a valuable tool to evaluate as well as differentiate placental morphology, echotexture variants and abnormalities.