The decrease in fertility after conservative myomectomy is still considered an important problem. One of the causes of this complication is decreased uterus size in these patients leading to miscarriage and preterm delivery while on 2D ultrasound the size and configuration of uterus often remain normal. 3D allows detection of its deformities inaccessible for visualization with 2D ultrasound.

The aim of our study was to develop 3D ultrasound criteria for predicting the onset and course of pregnancy after conservative myomectomy through assessment of uterine cavity.

The study included 156 patients mean age 33.7±3.4 who had undergone myomectomy in 2009-2011 and desired to become pregnant. The node size varied from 15-86 mm (mean size 44.2±15.7 mm), node locations included interstitial, subserous and submucous. Within 3 months after surgery all patients underwent three-dimensional transvaginal ultrasound during which the following were assessed: the shape of uterine cavity, presence of deformities, sharpness of endometrial shape on its real volumetric image; area and cavities were calculated.

Pregnancy developed in 96 (61.5%) patients within 12.2±4.7 months (including after assisted reproductive technologies (ART) - IVF and in utero insemination - in 26), of which 5 were ectopic, 23 terminated by miscarriage and 2 are carrying at present.

Among patients who carried pregnancy to full term (66) the main complication of pregnancy course was threatened miscarriage noted in 87.9% of patients. Surgical delivery was done in 50 (28% on 32-35 weeks term); 10 delivered through vaginal birth. On retrospective analysis of configuration, area and sizes of uterine cavity and their relation to reproductive outcomes it was established that in the vast majority of patients with pregnancy the shape of uterine cavity was close to normal triangular, area was 5.6-7.6 cm², which was close to control group measurements (5.6±0.7 cm²), distance between tube angles - 2.9±0.5 cm. Pregnancy did not occur in any of the patients with deformity of cavity at the site of tubular angles, uterine margins with marked «filling defects», T-shape of the cavity regardless of its area, and miscarriages more frequently occurred in women with prolonged shape of the cavity with distance between tubular angles below 2.8 cm and in widening of isthmic part of uterine cavity.

Analysis of our data allows confirming the benefits of three-dimensional ultrasound in predicting reproductive outcomes in patients who underwent conservative myomectomy.