Introduction
To evaluate the application value of real time three dimensional hysterosalpingo-contrast ultrasound contrast examination system in the detection of abnormalities in infertile patients.

METHODS
The hysterosalpingo-contrast examination system is constituted of the transvaginal Omni-View three dimensional ultrasonography (Omni-View 3D-TVS), sonohysterography and real-time three dimensional hysterosalpingo contrast sonography (RT-3D-HyCoSy). This study included 469 patients diagnosed infertility. Among them, 156 patients underwent hysteroscopy and 33 patients underwent laparoscopic surgery.

RESULTS
In cases, by Omni-View 3D-TVS, 12 arcuate uterus and 2 uterus unicornis were first detected and had been missed. By sonohysterography 22 uterine cavity adhesion, 80 endometrial polyps, 2 endometrial deletions were diagnosed. With polyps pathologies as the gold standard, sensitivity, specificity, accuracy rate of sonohysterography were 93.8% (75/80), 94.7% (72/76), 93.6% (146/156) respectively. With hysteroscopy as the gold standard for adhesion, Sensitivity,specificity, accuracy rate of sonohysterography were 95.6% (22/23), 98.4% (127/129), 95.5% (149/156) respectively. Compared with laparoscopic, RT-3D-HyCoSy had diagnostic accuracy of 86.3%. The test positive rates of RT-3D HyCoSy vs lap and dye were not significantly different (Kappa=0.841, P=0.000).

Conclusions The real-time three-dimensional hysterosalpingo contrast ultrasound contrast examination system can evaluate uterine cavity abnormality and fallopian tube patency comprehensively.