Problem statement: Evaluation of transvaginal 3D multislice saline infusion sonohysteroscopy for preoperative evaluation of the endometrial cavity changes.

Methods: In this study 45 patients with suspected endometrial pathology were included. 17 patients with evident pathological changes on transvaginal 3D multislice ultrasound scans were not scheduled for further diagnostic SIS procedure; instead they were scheduled for hysteroscopy. The remaining 28 patients underwent the additional 3D multislice SIS procedure in order to evaluate the uterine cavity and any endometrial pathology. After introduction of the catheter into the uterine cavity, transvaginal 3D scan of the uterus was performed in order to evaluate the catheter position. Once we were assured that the catheter was in the correct position warm saline was introduced into the uterine cavity and during this procedure 3D multislice transvaginal scans of the uterus were performed after distension of the uterine walls. Scans were performed in sagittal direction of the uterus first and then, after additional injection of saline, in transversal direction of the uterus. The volume datasets were stored for further analysis of the uterine cavity pathology.

Results: Mean patient's age was 38.7 years. In two patients 3D multislice SIS revealed normal endometrium and uterine cavity. Single polyp, either originating from anterior or posterior uterine wall, was detected in 15 patients. Polyp diameter ranged from 4 mm up to 25 mm. Multiple endometrial polyps were detected in two patients. Endometrial polyposis was detected in 4 patients after performing 3D multislice SIS procedure. In two patients endometrial adhesions were confirmed after SIS procedure. In three patients submucous myomas were confirmed during SIS procedure. Definitive hystopathological results confirmed endometrial polyps in 21 case. In one patient Adenomyosis was found in the polyp tissue. Intracavitary fibroids were confirmed in two cases, and also submucous myomas in 2 cases.

Conclusion: The 3D SIS is not time consuming, causes minimal discomfort to the patient and can be performed in office settings. 3D multislice SIS allows not only 3D reconstruction of the uterus and detected endometrial, intracavitary and submucosal pathology, but also imaging of sliced, sectional view of these changes and their association with the uterine wall and position in the uterine cavity. 3D multislice SIS enables precise location of endometrial changes and also correct measurement of the size and volume of diagnosed tumors. The obtained images during SIS procedure can be especially helpful in planning of the hysteroscopic operative treatment and removal of diagnosed tumours.