

The Diagnostic Yield of Comprehensive Ultrasound Assessment (SIS-HyCoSy) in the Workup of Infertile Women: A Single-Center Experience of 215 Cases



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Introduction

To evaluate whether comprehensive ultrasound assessment (saline infusion sonography/high contrast sonohysterography; SIS-HyCoSy) improves diagnostic accuracy, alters clinical management, and serves as a first-line tool to reduce invasive diagnostic procedures in sub-fertile women.

Methods

Retrospective study of 215 consecutive women (Jan 2024–Mar 2026) undergoing 2D/3D-TVS, SIS, and HyCoSy for tubal patency and uterine cavity assessment. Data included demographics, TVS findings, additional intracavitary pathology on SIS, tubal patency status, RMT assessment in post-cesarean patients, and management changes. Hysteroscopic comparison when available was performed.

Results

Mean age 34.1±5.3 years; 44.2% primary and 42.3% secondary infertility. TVS identified pathology in 27.9%. SIS revealed additional intracavitary findings in 3.3% (adhesions, fibroids, polyps Figure 1)—critical for clinical management. HyCoSy demonstrated 73% bilateral tubal patency and identified abnormalities in 16.3%, Figure 2. Combined protocol detected actionable findings beyond TVS alone in 18.6% and significantly altered management in 26.1% of patients (n=46). In 39 cesarean patients, SIS-measured RMT (5.56±2.89 mm) was significantly lower than TVS (6.12±2.64 mm; p=0.002), enhancing assessment accuracy Figure 3. Pregnancy follow-up (n=45) demonstrated conception method correlated with tubal status: bilateral occlusion (n=2) universally required IVF; patent tubes (n=34) achieved 35.3% spontaneous conception or 50% assisted reproduction. Preliminary hysteroscopic correlation (n=19) showed 77.8% cavity and 100% tubal concordance (n=4 assessable).

Conclusion

SIS-HyCoSy improves diagnostic accuracy and alters management in >25% of subfertile women. Hysteroscopic findings are promising but require larger validation. RMT assessment aids cesarean evaluation. Tubal assessment stratifies patients for appropriate conception. This offers comprehensive diagnostic information at lower cost and morbidity than surgical evaluation.



FIG 1 :SIS additional findings: **A** Adhesion, **B** Submucosal Fibroids, **C** Endometrial polyps



FIG 2 : Bilateral Tubal Patency

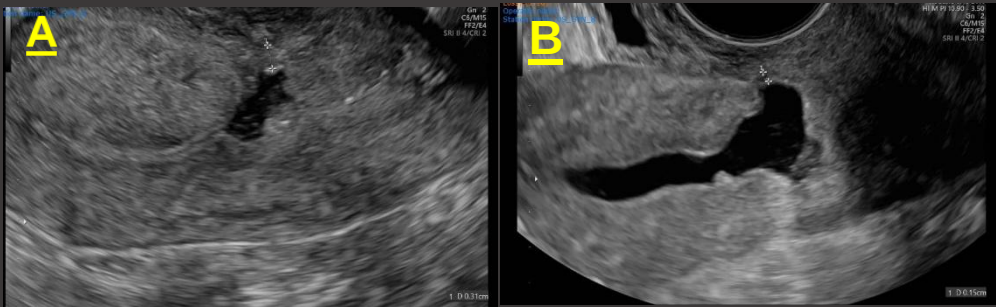


FIG 3 Post cesarean Niche **A** Before and **B** After Saline infusion