Objective:
Analysis of tubal occlusion region proportion of proximal, distal and middle in TVS four-dimensional hysterosalpingo contrast sonography (TVS 4D-HyCoSy), and explore the common causes of tubal obstruction.

Method:
Retrospective analysis 2514 female infertile patients performed TVS 4D-HyCoSy in our hospital from 2018 January to 2018 December. The examination results showed that 823 patients were unilateral or bilateral tubal obstruction (32.7%, 823/2514). The composition ratio of proximal, middle and distal obstruction is calculated. The coincidence rate of fallopian tubes obstruction was compared with laparoscopic chromopertubation (LAP) in sixty-two patients.

Results
In the 823 patients, 44 fallopian tubes were removed one or both sides due to ectopic pregnancy or ligated. Of the remaining 1602 tubes, obstruction account for 36.96% (597/1602). Of which 223 tubes were proximal obstruction (37.35%, 223/602), 57 fallopian tubes were middle obstruction (9.55%, 57/602) and 317 fallopian tubes were distal obstruction (53.10%, 317/602). Statistics showed that the coincidence rate of 4D-HyCoSy with LAP for diagnosis of tubal obstruction was 94.3% (117/124), the sensitivity was 90.1% (51/56), and the specificity was 94.1% (64/68).

Conclusion
Distal tubal obstruction is most common, which is mostly caused by the adhesion of tubal fimbria due to pelvic inflammation. Followed is proximal tubal obstruction, which is mostly caused by the adhesion of the fallopian tube opening and the blockage of mucous plug. The middle tubal obstruction is mostly caused by scar formation after conservative treatment or incision and embryo extraction of ectopic pregnancy.