## Supplementary



Figure S1 A transverse section view was obtained at the beginning of 4D-HyCoSy at the level where both uterine horns were displayed. 4D-HyCoSy, 4-dimensional hysterosalpingo-contrast sonography.

Table S1 Classification of tubal pate	ncy based on morphologic	findings in 4D-HyCoSy

Table S1 Classification of tubal patency based on morphologic initialities in 4D-HyCoSy							
Anatomical site	Patent	Partially obstructed	Obstructed				
Fallopian tube	Uniform tubal diameter with a large amount of contrast exiting from the distal end	Twisty or only partly visible fallopian tube with a small amount of contrast exiting from the distal end	No contrast filled in the fallopian tube and no contrast exiting from the distal end				
Periovarian	Ring-like enhancement around the ovary	Semiannular enhancement around the ovary	No enhancement around the ovary				
Pelvic cavity	Diffusion in a large range	Diffusion in a small range	No diffusion				
Reflux of contras	st No reflux	No or a small amount or reflux to the myometrium or pelvic venous plexus	A large amount of reflux to the myometrium or pelvic venous plexus				

4D-HyCoSy, 4-dimensional hysterosalpingo-contrast sonography.



**Figure S2** Representative images of fallopian tubes with different patencies in 4D-HyCosy. (A) Bilateral fallopian tubes were patent (patent/patent). (B) The unilateral fallopian tube was patent while the other was partially obstructed (patent/partially obstructed). (C) The unilateral fallopian tube was obstructed while the other was patent (patent/obstructed). (D) The bilateral fallopian tubes were partially obstructed (partially obstructed/partially obstructed). (E) The unilateral fallopian tube was obstructed while the other was patent (patent/obstructed) uses obstructed while the other was patent (patent/obstructed). (D) The bilateral fallopian tubes were partially obstructed (partially obstructed). (E) The unilateral fallopian tube was obstructed while the other was partially obstructed (partially obstructed). (F) The bilateral fallopian tubes were obstructed (obstructed/obstructed). 4D-HyCoSy, 4-dimensional hysterosalpingo-contrast sonography.

## Table S2 Baseline characteristics of the six groups

Characteristics	Fallopian tube patency groups						Duoluo
	Group A	Group B	Group C	Group D	Group E	Group F	- P value
Number (%)	80 (29.8)	58 (21.6)	15 (5.6)	60 (22.4)	23 (8.6)	32 (11.9)	
Ethnicity (%)	Asian (100)	Asian (100)	Asian (100)	Asian (100)	Asian (100)	Asian (100)	>0.99
Age (mean ± SD, years)	30.0±4.38	28.8±3.47	30.4±4.03	30.20±4.10	29.39±4.92	30.22±3.71	0.37
Endometrial thickness (mean $\pm$ SD, cm)	0.25±0.11	0.22±0.11	0.24±0.08	0.24±0.08	0.26±0.12	0.28±0.09	0.13
Left ovarian volume (mean $\pm$ SD, cm <sup>3</sup> )	17.87±7.54	13.58±6.57	11.92±5.05	18.67±23.83	17.45±10.67	16.38±8.77	0.56
Right ovarian volume (mean $\pm$ SD, cm <sup>3</sup> )	17.04±11.48	17.59±13.58	16.03±13.42	17.46±9.64	16.66±6.69	15.17±8.00	0.93

Group A, bilaterally patent (patent/patent); Group B, unilaterally patent group with the other partially obstructed (patent/partially obstructed); Group C, bilaterally partially obstructed (partially obstructed/partially obstructed); Group D, unilaterally obstructed with the other patent (patent/obstructed); Group E, unilaterally obstructed with the other partially obstructed (partially obstructed); Group F, bilaterally obstructed (obstructed). SD, standard deviation.