## Supplementary

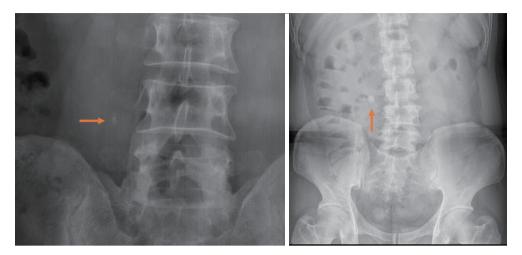


Figure S1 Profile of the two stone shapes. Oval (horizontal arrow) and quasi-circular stone (vertical arrow).

Table S1 Comparisons between the model with others

Item	Case Center	Object	Surgery	Predictors	AUC	Validation
This model	275 Single	Upper ureteral	URS, URSard, fURS	Length, location, shape, surgery	0.803	Internal
Imamura Y et al.	412 Single	All ureteral	URS	Length, number, location, pyuria	0.743	Internal
Zhang Y et al.	348 Single	All ureteral, renal	fURS, miniPCN, microPCN	Surgery, location, irrigation, operation duration, stone mass	0.810	Internal
Hori S et al.	586 Single	All ureteral, renal	fURS	Length, Hounsfield unit, location	0.845	Internal
De Nunzio C et al.	356 Double	e All ureteral	URS	Number, size, distal ureteral location, hydronephrosis	0.750	Internal

URS, ureteroscopy; URSard, ureteroscopy with anti-retropulsive device; fURS, flexible ureteroscopy; miniPCN, mini-percutaneous nephrolithotomy; microPCN, micro-percutaneous nephrolithotomy; AUC, area under the receiver operator characteristic curve.