

Does a Concomitant Hydronephrosis Affect the Success Rates of SWL Applied in Ureteral Stones?

Introduction and Objective: Investigate the effect of the hydronephrosis degree on the success of SWL.

Materials and Methods: Patients who applied to the emergency department with renal colic and who have single, radio opaque ureteric stone of 5 to 20 mm size were included in the study. Whenever a plain abdominal radiograph (PAR) revealed opacity suspicious of a ureteric stone, a urinary ultrasonography (USG) was also performed. When dilatation of the collecting system was detected, hydronephrosis was graded as follows: mild (grade 1), if only renal pelvis was dilated; moderate (grade 2), if renal pelvis and calices were dilated; severe, if renal pelvis and calices were dilated and renal parenchyma had become thin (grade 3). The presence of stone-free status and clinically insignificant residual fragments (<4 mm) (CIRF) were considered as a success. The effect of hydronephrosis degree on the numbers of SWL sessions, amount of energy used and success was investigated.

Results: The success rates according to hydronephrosis degree have been presented in table 1. Limited significance ($p<0,051$) was found between the degree of hydronephrosis and the need for SWL session. Although the degree of hydronephrosis and success of SWL procedure are not a correlated (Pearson's chi-square test, $p=0.454$), SWL sessions that needed to achieve the same success increased. Significant correlation between hydronephrosis degree and stone washout time was not determined (Kruskal Wallis test, $p=0.769$). There was not a significant correlation between hydronephrosis degree and stone washout time)

Conclusions: A limited correlation was determined between the degree of hydronephrosis and the need of SWL session. This also shows more energy is needed/consumed for fragmentation and washout of the waited and impacted stones.

Table 1 The relationship between the grade of hydronephrosis and post- SWL situation.

Grade of Hydronephrosis	Condition after treatment			Total
	Stone-free	CIRF *	Unsuccessful	
No hydronephrosis	3	1	-	4
I	17	8	4	29
II	12	7	4	23
III	2	1	3	6
Total	34	17	11	62

* Clinically insignificant residual fragments