Obstruction Score of Ureteropelvic Junction Investigated by Modified F-15 Diuresis Renography

Silvio Altarac

Department of Urology, The Royal Hallamshire Hospital, Sheffield, United Kingdom


Methods. Twenty-eight adults with unilateral pelviureteric junction obstruction were assessed by ultrasound scan, furosemide-enhanced intravenous urography and modified (F-15) $^{99m}$Tc-DTPA diuresis renography. Renal unit drainage pattern was assessed by the obstruction score (sum of the time to peak, the index of excretion, and the tracer washout 40 min after furosemide administration). Renal units were classified as normal (0-3), equivocal (4-7) or obstructed (8-10). Renal function was determined by a split renal function and individual kidney glomerular filtration rate. The whole kidney minimum transit time was assessed as an interval on time scale between tracer input and output curve.

Results. After a 28-month mean follow-up, ultrasound findings were improved in 23 and unchanged in 5 patients. Regarding the response to furosemide, intravenous urography showed improvement in 19, no change in 8, and deterioration in 1 patient. The upper urinary tract on the affected side was obstructed in 26 and equivocal in 2 patients. Postpyeloplasty outcome was normal in 12 and equivocal in 16 cases. Overall drainage function was improved in 27 and unchanged in 1 patient. Parenchymal function was improved in 20, unchanged in 2, and deteriorated in 6 patients. Whole kidney minimum transit time was significantly reduced (5.55±1.56 to 4.41±0.83 min; p<0.001).

Conclusion. The F-15 diuresis renography supplemented with the obstruction score system may be used for assessing the upper urinary tract urodynamics as initial diagnosis and in long-term follow-ups.

Key words: diuresis; furosemide; renography; ureteral diseases; urography

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Correspondence to:
Dr Silvio Altarac
Department of Urology
General Hospital Pula
Zagrebacka 22a
52100 Pula, Croatia