Paediatric Tc99m DMSA Renal Cortical Scintigraphy: Beyond Urinary Tract Infections

Kader Torbator
Department of Radiology, Great Ormond Street Hospital for Children, London, UK

Lorenzo Biassoni
Department of Radiology, Great Ormond Street Hospital for Children, London, UK

Riwa Meshaka
Department of Radiology, Great Ormond Street Hospital for Children, London, UK

Abstract

Static renal cortical scintigraphy with ^{99m}Tc- dimercaptosuccinic acid ([^{99m}Tc] Tc-DMSA) is currently the imaging modality of choice to assess regional renal parenchymal function. The tracer uptake of ^{99m}Tc- reflects renal cortical integrity. DMSA is the test of choice for renal scarring following urinary tract infections. However, many other cortical defects can be detected, from acquired to congenital renal abnormalities[1-3].

This educational presentation will cover use of DMSA scanning in the following clinical contexts:

- DMSA scanning in recurrent urinary tract infections and acute pyelonephritis
- Functional characterization of structural renal abnormalities: e.g. solitary kidney, duplex kidney, small kidney, dysplastic kidney, horseshoe kidney, and pseudo-horseshoe kidney
- Detection of renal ectopia – crossed fused kidney
- Evaluation of renal parenchymal function in reno-vascular conditions – renovascular hypertension, renal vein thrombosis, renal septic embolism.
- Assessment of renal parenchymal function in hydronephrosis
- Evaluation of renal parenchymal damage post trauma
- Renal parenchymal function assessment in complex renal calculi before and after treatment.
- Assessment of function in multi-cystic dysplastic kidney