

The greatest concern for papers predicting outcome of undescended testes is that they are just that, predictions. It takes an extremely long study to actually document fertility and paternity and the threshold of Leydig cell depletion which affects adult hormone function is not clear.

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Abnormal renal scans and decreased early resolution of low grade vesicoureteral reflux

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Purpose: Limited studies suggest a relationship between scarring on renal scan and failure to resolve vesicoureteral reflux. We evaluated the impact of abnormal renal scans on early vesicoureteral reflux resolution.

Materials and Methods: The medical records and renal scans were reviewed of children diagnosed with primary reflux between 1988 and 2004. We defined an abnormal renal scan as renal scarring or relative renal function 40% or less. Reflux resolution was noted 1 and 2 years after diagnosis.

Results: Renal scan data were available on 161 children with vesicoureteral reflux, including 127 girls and 34 boys. Relative renal function was 15% or less in 7 children, 16% to 35% in 14, 36% to 40% in 18 and greater than 40% in 122. Of the 161 patients 79 (43%) had an abnormal renal scan, including 37% with grades 1 to 3 reflux. The rate of 2-year reflux resolution in the abnormal and normal renal scan groups was 13% vs 53%. Of children with grades II and III reflux those with an abnormal renal scan were less likely to have reflux resolution compared to those with normal renal scans (23% vs 55% and 4% vs 41, respectively, $p < 0.05$). The same relationship was present at 1 year for grades 2 and 3 (18% vs 49% and 4% vs 30, respectively, $p < 0.05$).

Conclusions: Abnormal renal scans are an important independent predictor of early failure to resolve vesicoureteral reflux. An abnormal renal scan should be considered when counseling families about the likelihood of early reflux resolution. Performing a renal scan may be indicated in select patients.

Editorial Comment

This research deals with 16 years of reflux studies in which patients had a renal scan and a VCUG. Demographic variables as well as voiding dysfunction were noted and compared. One hundred and sixty-one patients had a renal scan and all of the recurred data for the study. Four different kinds of renal scans were used over this long data collection period, including glucoheptonate, Mag3, DMSA and DPTA. Relative renal function was judged to be poor if it were less than 40% and abnormal renal scans were noted if there were renal scars, even if the relative renal function was normal.

Seventy children, 43.5%, had abnormal renal scans and 91 children had normal renal scans. Boys had a few more abnormal renal scans than girls did but this did not reach statistical significance. The incidence of voiding dysfunction between normal and abnormal renal scans was the same. Abnormal renal scans were more prevalent in higher grades of reflux and this reached a p value of less than 0.001. There was not a statistical difference between different kinds of renal scans.

Reflux spontaneous resolution rate was 29.8% at 1 year and 35.4% at 2 years and 33 children in the study group underwent corrective surgery within the first two years. Of the patients with diminished relative

renal function, 10% had VUR resolution and in the normal renal function group, 43% had resolution with p value of less than 0.001. Reflux grades were not compared in Grade IV and V patients because so many of them had abnormal renal scans and the resolution rate had a negative correlation with the abnormal renal scans in Grade I-III. None of the patients with abnormal renal scans and voiding dysfunction had resolution in the first 2 years.

The management of vesicoureteral reflux is multifaceted and the time where the greater the reflux allowed simple surgical decisions to be made is long past. This study shows that previous kidney scarring for relative poor kidney function has an impact on vesicoureteral reflux resolution at least in the first two years. This study unfortunately used four different kinds of renal scans but this did not seem to alter the statistics. It is probably best at this time to recognize that preventing the kidney scars is the purpose of reflux treatment and reflux is only one factor to consider among others such as kidney scarring and bladder dysfunction.

The longest follow up was two years and it would be most interesting to see what the five-year follow up data would be.

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