Case Report

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A Suspected Case of Bilateral Crossed Renal Ectopia or Bilateral Jet Effect

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Renal ectopia, crossed, bilateral

Abstract
Crossed renal ectopia is a relatively unusual congenital anomaly. Bilateral crossed renal ectopia is considered the rarest form of this anomaly. A 19-year-old girl with intermittent flank pain was admitted to our department. Various clinical and laboratory examinations were carried out. Excretory urography showed a normal upper urinary tract anatomy, whereas the distal ends of the ureters crossed each other in the pelvis, which suggested bilateral crossed renal ectopia.

Introduction

Renal ectopia describes a kidney in an abnormal location congenitally. Anomalies of the kidney were first locally categorized by Wilmer [1], but McDonald and McCelland [2] again refined and expanded this classification.

Crossed renal ectopia, also known as contralateral renal ectopia, occurs when the kidney is located on the side of the body opposite the orifice of its attendant ureter. In decreasing order of frequency, this anomaly may occur as crossed ectopia with fusion, crossed ectopia without fusion, solitary crossed ectopia and bilateral crossed ectopia. Bilateral crossed renal ectopia occurs when both the left and right kidneys are on the wrong side, whereas their attendant ureters arise normally. As far as we know, bilateral crossed renal ectopia has been described only in 5 patients [1, 3, 4] and is the rarest form.

Case Report

A 19-year-old girl was evaluated in December 1994 for intermittent back pain. She had a 2-year history of bouts of bilateral dull insidious flank pain, and had twice been admitted to different clinics complaining of this symptom. She had no other significant medical history, and the physical and laboratory examinations were unmarkable. She has a normal complete blood count, and urinalysis showed 2–4 white and 1–3 red blood cells with no proteinuria. A plain abdominal X-ray showed no noticeable abnormality.

She was a new nurse who had just started to work in our hospital before presentation. She reported about a cousin with nephrotic syndrome due to familial Mediterranean fever, which made her worry more about her kidneys. Accordingly, we were obliged to examine her further. Abdominal ultrasonography revealed completely normal findings with no abnormality in the kidneys or bladder. Excretory urography (IVP) showed bilateral functioning kidneys with normal upper urinary tract anatomy, whereas the distal ends of the ureters crossed each other in the pelvis (fig. 1). No signs of obstructive uropathy were present. This finding suggested bilateral crossed renal ectopia. However, cystoscopic examination and retrograde pyelography were attempted to document the case. But unfortunately, she refused to undergo the latter examinations, despite all our insistance.

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Fig. 1. Intravenous urography showing the crossing of the distal ureters or jet streams behind the bladder.

Discussion

The clinical diagnosis of crossed renal ectopia is usually made by excretory urography. Cystoscopic examination and retrograde pyelography are usually required to make the diagnosis certain. The so-called bilateral crossed renal ectopia in IVP may also be suggestive of the jet effect seen bilaterally, which is also a rare occasion. Crossing of the ureters in crossed ectopia is usually higher up below the site of renal crossing and not juxtavesical as it is in our case. Although the IVP finding is seemingly bilateral crossed renal ectopia, a urinary jet stream might mimic the entity. This entity needs to be excluded by additional examinations. The other cases reported in the literature need also be criticized from this point of view.

The first reported case of crossed ectopia was described by Pamarolus in 1654. Abeshouse and Bihisitkul [4] in 1959 conducted the last significant review on the subject. Subsequently numerous case reports have been published. To our knowledge, none of the published cases were bilateral except for 5 cases reported before 1959 [1, 3, 4]. The embryological development of crossed renal ectopia has not been clearly established. Some theories have been proposed to explain this abnormal development, such as faulty development of the ureteric buds, vascular obstruction to the ascent of the kidneys, and environmental factors involving surrounding tissues and organs [1, 4]. In crossed ectopia, the renal blastema is deviated to the opposite side, where it usually lies caudal to the normal kidney, with which it may fuse. Its ureter usually crosses the midline to terminate in the normal position. Such kidneys are predisposed to hydronephrosis and pyelonephritis. The symptoms of crossed renal ectopia in general depend on the associated pathologic conditions. Pain is reported to be the most common symptom as in our case, though many patients are entirely asymptomatic.

References

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