Newborn with urinary ascites and renal calyx rupture secondary to posterior urethral valve: sonographic diagnosis*

Neonato com ascite urinária e ruptura de cálice renal secundárias a válvula de uretra posterior: diagnóstico ultrassonográfico

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Abstract The literature reports only rare cases of urinary ascites, usually secondary to rupture of the bladder and not to renal calyx rupture. The present report describes an uncommon case of posterior urethral valve in a newborn with ascites caused by the rupture of a renal calyx that, to our knowledge, was diagnosed for the first time by ultrasonography.

Keywords: Newborn; Urinary ascites; Renal calyx rupture; Posterior urethral valve; Ultrasonography.

Resumo A literatura relata somente alguns casos de recém-nascidos com ascite urinária, geralmente secundária a ruptura de bexiga urinária e não de um cálice renal. Este relato de caso descreve um caso raro de ascite urinária em recém-nascido com válvula de uretra posterior que teve ruptura de um cálice renal, neste caso diagnosticada, até onde sabemos, pela primeira vez por ultrassonografia.

Unitermos: Neonato; Ascite urinária; Ruptura de cálice renal; Válvula de uretra posterior; Ultrassonografia.

INTRODUCTION

Ascites is a rare condition in neonates and generally may present several etiologies, urinary ascites being most frequently found⁴,². In most reported cases, the urinary ascites origin is related to the presence of a posterior urethral valve, determining urinary bladder rupture and consequential ascites³. In the medical literature review, the authors have found only one case of urinary ascites secondary to rupture of a renal calyx in a newborn with posterior urethral valve⁵. In the above mentioned case, the diagnosis of such complication was achieved by means of micturating cystourethrography.

The authors describe a case of urinary ascites secondary to renal calyx rupture in a newborn with posterior urethral valve, diagnosed by ultrasonography (US).

CASE REPORT

A male infant born by normal delivery, weighting 2.815g, with Apgar 8 and 9, respectively at the first and fifth minutes. The newborn was uneventfully discharged with 48 hours of life.

At his ninth day of life, the infant came back to the emergency department because of a progressive abdominal distention that had become more noticeable in the last three days. Vomiting was not observed, only a regurgitation episode in the previous day was reported.

At clinical examination, the infant presented a significant abdominal distention, but the abdomen was painless at palpation and apparently with no visceral megaly. Hydro-aerial bruits were present and the fluid-wave test was positive.

The prenatal mother’s blood tests results were normal. Three previous obstetric US studies (at the 4th, 7th and 8th months) had not demonstrated any fetal abnormality. The mother denied consanguinity and/or diseases in her other three children.

Plain abdominal radiography performed immediately after the infant admission demonstrated the presence of ascites (Figure 1). Abdominal US demonstrated massive ascites with lumps, kidneys with preserved parenchymal thickness and significant dilatation of the calyceal cavities. Additionally, such study demonstrated calyceal rupture in the upper group of the left kidney and perirenal fluid (Figure 2), a poorly filled urinary bladder with slightly thickened walls.

Then, the patient was submitted to micturating cystourethrography that demonstrated a urinary bladder with normal capacity, trabeculae and pseudodiverticula. Grade V vesicoureteral reflux was ob-
served at left, represented by significant
dilatation of the left sided calyceal system
and ureter (Figures 3A and 3B). Contrast
mean extravasation into the left peripheral
space was observed with accumulation next
to the upper pole of the kidney and subse-
quint extravasation into the peritoneal cav-
ity. Posterior urethral dilation was observed
(Figure 3B). Right-sided vesicoureteral re-
flux was not seen.

The infant was submitted to bilateral cu-
taneous ureterostomy and cystoscopy. The
patient was discharged in good general
conditions, with weight gain, and normal
blood count and electrolyte levels.
DISCUSSION

Ascites is a rare condition in neonates, with different causes such as problems of biliary nature, liver, heart, chylous, infectious, urinary diseases, or even a condition of unknown nature. Thus, the establishment of a correct diagnosis may be challenging, and many times it is defined by imaging studies such as micturating cystourethrography, US and Tc-99m scintigraphy. The establishment of an accurate diagnosis of the cause and complications of the disease is critical for the definition of a correct management and a favorable clinical progression.

Amongst the above mentioned causes, urinary nature is one of the most frequently observed. The cases of urinary ascites reported in the medical literature are generally related to bladder rupture secondary to the presence of a posterior urethral valve in boys. Such diagnosis is achieved after extensive investigation and defined by micturating cystourethrography.

In the medical literature review, the authors have found only one case report describing urinary ascites with renal calyx rupture secondary to the presence of a posterior urethral valve, where the diagnosis was defined by means of micturating cystourethrography.

The original character of the present case is corroborated by the fact that the ascites was secondary to renal calyx rupture and the diagnosis was achieved by US.

As a conclusion, in cases of neonatal urinary ascites caused by renal calyx rupture, US can demonstrate the rupture directing the investigation towards a specific imaging method—in this case, micturating cystourethrography.

REFERENCES