

Neonatal Uro-Sepsis Presenting with a Prostatic Abscess in a 20 Day Old Baby

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1. Introduction

Urinary Tract Infection (UTI) is commonly seen in young infants and poses a serious problem. UTI in neonates (<30 days of age) is associated with bacteremia and can be associated with congenital anomalies of the kidneys and urinary tract. UTI affects approximately one in six febrile neonates ≤30 days of age and the prevalence of UTI in febrile infants <8 weeks of age is 13.6%. UTI in neonates have a male predominance; males are affected 2.5-times greater than females [1, 2].

Neonates who have undergone circumcision have a lower chance of developing UTI as compared to those who have not been circumcised. The accompanying underlying renal abnormalities poses an increased risk of neonates developing UTI. VUR (vesico-ureteric reflux) is associated with approximately 20% of neonatal cases of UTI. Presentation of neonates with UTI can vary ranging from fever, poor feeding, vomiting, lethargy and diarrhea. Occasionally they can be associated with jaundice [3].

The occurrence of pyogenic infection of the prostate in a neonate is uncommon. We report the case of a prostatic abscess in a 20-day-old neonate, in whom successful treatment with post treatment scan showed improvement in the baby with resolved abscess.

2. Case Presentation

A 20 day old neonate was brought with complaints of fever, hematuria, and pyuria. The baby had a temperature of 38.6 degrees Celsius. Urine analysis revealed slightly turbid urine with more than 250 leucocytes per high power field.

Abdominal ultrasound was performed which revealed an enlarged heterogeneous appearing prostate gland with a small hypoechoic

area in the left half of the gland with internal echoes measuring 0.6 x 0.4 x 0.6cm (Figure 1). There was prominent peripheral vascularity, and no distinct central vascularity on color Doppler imaging.

The urinary bladder showed diffuse wall thickening with internal echoes seen layering in the dependant position. The ureter showed no obvious dilatation, these findings were suggestive of cystitis (Figure 2).

A diagnosis of prostatic abscess with cystitis was given and a close follow up was suggested. C-Reactive Protein (CRP) was 50.3 mg/L initially at admission.

Urine culture done showed growth of Methicillin-Resistant Staphylococcus Aureus (MRSA), which was sensitive to vancomycin, linezolid, and nitrofurantoin. Hence the baby was started on vancomycin (injection).

Subsequently in 6 day's time the fever decreased, and CRP gradually normalized.

A repeat ultrasound was done after 10 days, which showed normal-sized prostate with a tiny left sided hypoechoic area measuring 0.2x 0.4 x 0.3cm suggestive of a residual collection (Figure 3).

The urinary bladder showed minimal wall thickening. Few internal echoes seen as layering in the dependant position appear to have considerably reduced as compared to previous scan. The ureter showed no obvious dilatation, these findings were suggestive of minimal changes of cystitis (Figure 4).

The repeat urine culture after the antibiotic course was sterile. The baby was examined on follow-up and was found to be thriving well.

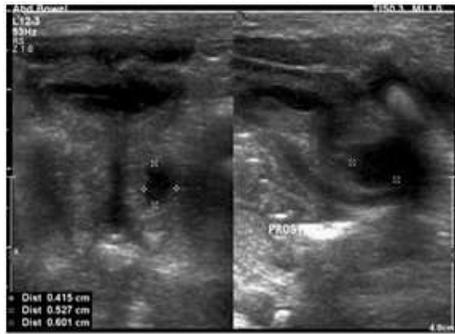


Figure 1: Enlarged heterogeneous appearing prostate gland with a small hypoechoic area in the left half of the gland with internal echoes representing the abscess.



Figure 2: There is Urinary tract infection depicted by layering internal echoes within the bladder.

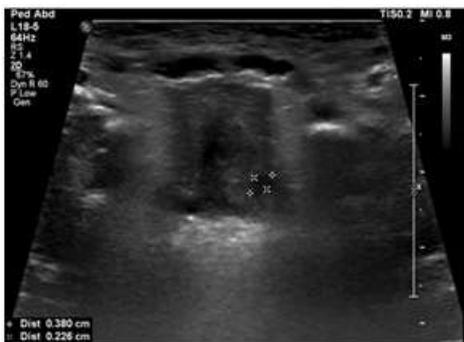


Figure 3: Showed normal-sized prostate with a tiny left sided hypoechoic area depicting resolution of the abscess.

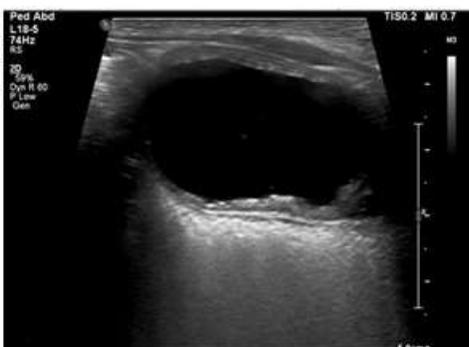


Figure 4: Internal echoes within the urinary bladder appear to have considerably reduced as compared to previous scan.

3. Discussion

Urinary tract infections in infants are common, especially in male infants but prostatic abscess is seen rarely. A prostatic abscess is a very rare clinical variety of UTI, especially in neonates. Only 14 cases have been reported in the literature before our case report. Few factors are responsible for the occurrence of prostatic abscess in neonates. In general neonates are at risk of any infection.

Some of the factors are:

- I) Obstruction to the flow of urine due to physiologic phimosis
- II) Presence of squamous metaplasia of the epithelium of the urethra, prostatic urethra, and prostatic glands at birth, which undergoes regression during the first week of life [4].

Reason behind the occurrence of prostatic abscess can be explained by hematogenous spread of organisms to the prostate, most commonly after Staphylococcal bacteremia and ascending UTI, which may occur because of the reflux of urine from the urethra into the prostatic ducts during micturition [5, 6, 9].

Neonates with prostatic abscess usually present with fever, hematuria, or pyuria. The clinical diagnosis of prostatic abscess in neonates is difficult because rectal examinations are not routinely performed in neonates. A thoroughly done ultrasonography helps in diagnosing prostatic abscess. MRI with contrast may be used as a problem-solving tool to differentiate between acute prostatitis and prostatic abscess. The most common pathogen seen to cause neonatal prostatic abscess is staphylococcus aureus. Treatment of prostatic abscess mainly focuses on appropriate antibiotic therapy based on urine culture and sensitivity occasionally the drainage of pus by an appropriate approach may be required if the child is not recuperating well [7, 8, 10, 11].

4. Conclusions

Urosepsis in neonates presenting with a prostatic abscess is very rare. A prostatic abscess usually presents with urinary retention, fever, or pyuria. Ultrasound plays a pivotal role in the early diagnosis of prostatic abscess. Magnetic resonance imaging can further aid in prostatic abscess differentiation from prostatitis. Treatment of prostatic abscess involves appropriate antibiotic therapy and subsequent drainage of pus if required. A prostatic abscess has a good prognosis in neonates when early diagnosis and treatment are started on time.

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