COMPLICATED PYELONEPHRITIS AND PYONEPHROSIS CAUSED BY SALMONELLA TYPE C: CASE REPORT

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Background

Salmonella species are considered a rare cause of UTI in children, usually associated with immunocompromised state or anatomic abnormalities.

We present a case of a 14 month old boy with urosepsis and pyonephrosis caused by *Salmonella* Group C.

Case Description

A 14 month old boy previously healthy presented to the emergency department with a 5-day history of weakness, fever (40.5° C), vomiting and diarrhea.

Before admission, he was diagnosed with suspected bacterial gastroenteritis and was treated empirically with azithromycin, without improvement.

At admission, urinalysis detected pyuria with moderate blood and microalbuminuria (table 1). Blood, feces and urine cultures yielded *Salmonella enterica* group C.

Abdominal US revealed moderate-severe left hydroureteronephrosis and pyonephrosis (figure 1 and 2).

Congenital obstructive megaureter was diagnosed.

Case Description (cont.)

He was treated with ceftriaxone and subsequent blood, urine and stool cultures were all negative.

An ureteral stent was inserted for drainage and within a few hours his symptoms improved dramatically.

Treatment with oral trimethoprim-sulfamethoxazole was added.

A left ureteral reimplantation surgery was performed to correct congenital obstructive megaureter secondary to ureteral vesicular junction stenosis. Follow up abdominal US with improvement of hydronephrosis.

Table 1. Urinalysis at Admission

	Result	Ref Range
Glucose	Negative	Negative
Trichomonas		0-100
Keton	Negative	Negative
Specific gravity	1.010	1.01-1.02
Blood	Moderate	Negative
PH	6	6-7
Protein	30	Negative - 100
Urobilinogen	0.2	1 - 2
Nitrites	Negative	Negative
Leucocytes	Large	Negative

Figure 1. Abdominal US, left kidney with dilated calyces and pelvis filled with echogenic material

Figure 2. Abdominal US, ureter filled with purulent material

Discussion

Salmonella species can cause pyelonephritis and pyonephrosis in a child with underlying urinary tract abnormalities following gastrointestinal infection.

Remittent fever should prompt abdominal imaging to evaluate for this possibility.

Drainage should not be delayed in case of pyonephrosis.

References

1. Batista da Costa, J., Cornu, J., Levgraverend, D., Cordel, H., Ridel, C., Letendre, J., Traxer, O., Tligui, M. and Haab, F. (2014). Pyonephrosis Caused by *Salmonella* Typhi: A Case Report. *Urologia Internationalis*, 96(2), pp.241-243.
2. Tena, D., González-Praetorius, A. and Bisquert, J. (2007). Urinary tract infection due to non-typhoidal *Salmonella*: Report of 19 cases. *Journal of Infection*, 54(3), pp.245-249.