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URINARY TRACT TUBERCULOSIS IN A CHILD WITH HENOCH – SCHÖNLEIN PURPURA: A CASE REPORT*

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Tuberculosis is still a major problem in developing countries where the risk of infection is about 2.6% annually, and 45% of the population is infected at the age of 20 years[1]. In adults 4-9% of cases develop urogenital tuberculosis[2] which is a secondary manifestation of pulmonary disease. However, in children this figure is estimated to be much lower[3].

We report an unusual case of urogenital tuberculosis in a child with strictures in the mid-portion of the ureter. As far as we know, such a stricture in childhood has not been reported in the English literature.

Case Report

A seven-year-old girl, the third child of healthy, unrelated parents, had a normal birth and early childhood. There was no known case of tuberculosis in the family. She was admitted to our hospital because of erythematous maculopapules on the lower extremities and buttocks, and abdominal pain. She was diagnosed as Henoch-Schönlein Purpura (HSP). Two weeks later, on her second admission, she was still complaining of severe abdominal pain and because hypertension was noted as well, she was hospitalized for further investigation.

Physical examination on admission revealed an alert girl with a temperature of 36.5°C, respiration rate of 28/min, pulse rate of 100/min, and blood pressure of 140/100 mmHg. The rest of the examination was normal except for flank pain on the right side. Laboratory studies revealed that the hemoglobin level was 11.10 g/dl, peripheral white blood cell count 9200 per mm^3 with 72% neutrophils, 24% lymphocytes and 4% monocytes. The platelets were adequate and the red blood

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cell morphology was normal. The sedimentation rate was high (78 mm/hr). The PPD reaction was positive (13 × 13 mm). Urinalysis revealed no proteinuria, but microscopic pyuria. Urine cultures, a total of seven, were negative. Acid-fast bacilli were not recovered.

The patient's unexplained fevers, sterile pyuria and positive tuberculin conversion suggested the diagnosis of tuberculosis. The child was further evaluated for her hypertension. Chest X-ray was normal. Renal function tests were within normal limits. Serologic tests for rheumatoid factors, antinuclear antibodies, hepatitis B surface antigen and antibody, and an LE-cell test were negative. The C_3 level was 110 mg/dl, and C_4 level 44 mg/dl. The renin level was 18.5 ng/ml/hr (normal: 0.51-4.18 ng/ml/hr). Abdominal ultrasonography revealed a dilated bilateral renal pelvis and left proximal ureter. The IVP showed a segmentary stricture on the middle third part of the bilateral ureters, more pronounced on the left, causing acute obstruction on that side. The voiding cystouretrogram was normal. A left retrograde pyelography was performed and the stricture was verified.

Surgical intervention was decided because signs of obstruction were observed. During the operation, excision of the stricture and a uretero-ureterostomy was performed. A biopsy of the lesion revealed caseification and calcification, a specific chronic granulomatous inflammatory stenosing ureteritis.

The patient was given antituberculosis therapy comprising 20 mg/kg of isoniazid and 20 mg/kg of rifampicin. The hypertension and abdominal pain resolved after the operation.

Discussion

A primary diagnosis of HSP in our patient was based on the characteristic clinical features of a purpuric rash involving the lower extremities and buttocks and also abdominal pain. In spite of the patient's hypertension, repeated urinalysis only revealed 8-10 white blood cells per high-power field. Renal involvement accompanying the HSP seemed rather unlikely because of the absence of proteinuria and microscopic findings in the urine. In HSP one third of patients with renal involvement are expected to have hematuria, whereas, one fourth have proteinuria and/or the nephrotic syndrome[4].

Since 1980, ten cases of stenosing ureteritis in HSP have been reported[5]. All were over five years of age and presented with flank pain. Multiple segments of the ureter appear to be affected in a majority of these patients but the ureteropelvic junction seems to be the commonest site of obstruction. Histopathologic studies of the ureters of five of the patients showed necrotizing vasculitis and ureteritis in two, ureteritis, fibrosis and calcification in two, and a calcified ureter in one patient. The role of corticosteroid treatment in preventing ureteral strictures in HSP is uncertain[5].

In our patient, the biopsy diagnosis was characteristic of tuberculosis. Urogenital tuberculosis is caused by the blood-borne metastatic organism, *Mycobacterium tuberculosis*[6]. It has been reported that a time lag of 2-20 years occurs between the initial pulmonary tuberculosis infection and the manifestations of urogenital tuberculosis[3]. This lag probably accounts for the widely-held erroneous belief that urogenital tuberculosis does not occur in children. But specially in our country, tuberculosis should be sought in all cases of sterile pyuria or chronic urinary tract infections which do not respond to the usual antibacterial therapy. In a report from Babies' Hospital, New York, Ehrlich and Lattimer[3] noted that 17 of their 30 children were asymptomatic whereas the most common laboratory finding was microscopic pyuria. Another report from Mayo Clinic shows again, that half of the patients are asymptomatic and that frequency, and dysuria are the commonest symptoms[7] The tuberculin conversion is found to be positive in 5 percent of the cases and early morning urine specimens should be cultured and animal inoculations should be carried out, which again yield highly positive results.

Hypertension has been known to be associated with renal tuberculosis since 1940[6]. Hypertension may be due to the reduction in the blood supply to part or the whole of the kidney[6], or due to acute obstruction of the ureter as in our patient. A fall in blood pressure is expected after nephrectomy[6] or after the relief of the obstruction in such cases, respectively.

The relationship of Takayasu arteritis and tuberculosis has been suggested by several authors[8]. Although this subject is still controversial, a high incidence of tuberculin sensitivity is noted in children with Takayasu's arteritis and an adolescent has been reported to demonstrate complete symptomatic remission with antituberculosis therapy[8]. Such an association has not been reported with HSP. On the other hand immunological abnormalities in HSP have been reported in various studies. Thus, the HSP in our case, might have acted as an aggravating factor for the tuberculosis infection, which was previously asymptomatic. Still a possibility of coincidence cannot be discarded.

Summary

A seven-year-old girl is presented, who was previously diagnosed as having Henoch-Schönlein vasculitis, and was further evaluated for hypertension. Urograms showed bilateral strictures of the ureter, causing obstruction on the left side. Tuberculosis, our preoperative diagnosis, evidenced by her sterile pyuria and PPD conversion was confirmed by the surgical specimen and treatment was begun.

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