

LYME DISEASE - UNUSUAL MEDICAL ENCOUNTER FOR AN UROLOGIST

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LYME DISEASE–UNUSUAL MEDICAL ENCOUNTER FOR AN UROLOGIST (Abstract): Lyme disease also called „the illness with a thousand faces" ("The Great Imitator") because it may mimic very well the symptoms and signs of other diseases, is an unusual medical encounter for the urologist. Every patient with Lyme disease has his own clinical feature, while the superposition over an unknown but easy to discover urological disease may lead to a misdiagnosis. **Case presentation:** Male patient A. P. was an emergency transfer in our clinic with multiple system organ failure. The mirage of first imaging finding, bilateral obstructive ureteral calculi was obviated after the serological confirmation of Lyme disease suspected after the thorough history obtained from his family. The intensive care treatment, broad-spectrum antibiotics and hemodialysis sessions, together with external urinary drainage, lead to the improvement of the patient status, and subsequent proper urological treatment to urolithiasis cure. **Conclusions:** This case identifies several challenges faced by practitioners, challenges which involve the diagnosis and the treatment of Lyme disease associated with urolithiasis. Although Lyme disease remains a controversial clinical entity, its diagnosis is based on a history of possible exposure to ticks, the appearance of specific clinical symptoms, whether or not combined with serological tests. **Keywords:** LYME DISEASE, *BORRELIA BURGdorFERI*, UROLITHIASIS.

Lyme disease, also called „the illness with a thousand faces" ("The Great Imitator") because it may mimic very well the symptoms and signs of other diseases, is an unusual medical encounter for the urologist. Every patient with Lyme disease has his own clinical feature, while the superposition over an unknown urological disease but easy detectable through imaging may lead to a misdiagnosis.

CASE PRESENTATION

The patient AP, age 46 (Hx 9546) was

hospitalized in the Urology and Renal Transplantation Clinic Iasi being an emergency transfer from a county urological medical unit. The patient with urological history (left ureterolithotomy for pelvic ureteral calculi during childhood) and known for therapeutically neglected nephrolithiasis was hospitalized in severe condition, 3rd degree coma, GCS=3, fixed mydriasis, respiratory acidosis, hemodynamic instability (also present during transport), TA=40/20 mmHg, heart rate 36/minute, idioventricular rhythm. The biological examination reveals severe

nitrogen retention, severe electrolyte imbalances, inflammatory syndrome and other metabolic changes (tab. I).

The emergency imaging assessment (ultrasonic and radiologic) reveals bilateral obstructing voluminous urolithiasis with 2nd -3rd degree bilateral uretero-hydro-nephrosis with correct transonicity (fig. 1).

Immediately after admission to the intensive care the patient receives device to aid breathing and is inserted central venous catheter, an inotropic support being set up. Despite the hemodynamic instability a hemodialysis session is performed in order to regulate the severe hydro-electrolytic and acido-basic imbalances.

TABLE I
Initial biological assessment

Test	Result	Normal values	Test	Result	Normal values
Urea	666	10 – 50 mg%	Na	117	135 – 148 mmol/l
Creatinine	29,31	0,7 – 1,3 mg%	K	9,5	3,5 – 5,1 mmol/l
Blood sugar	224	70 – 115 mg%	Cl	82	98 – 107 mmol/l
GOT	18	1 – 38 u/l	pH	6,8	7, 31- 7, 41
GPT	14	1 – 41 u/l	White blood cells	23.650	4000 – 9000/mm ³
TGG	33	10 – 71 u/l	Red blood cell no.	2,95	4,63 – 6,1 mil/mm ³
Amylasemia	1066	28 – 100 u/l	Hemoglobin	8,5	13,7 – 17,5 g/dl
T Proteins	69	66 – 87 g/l	Packed cell volume	23,9	40,1 – 51,0 %
CK	549	26 – 195 u/l	EST	112	2 – 10 mm/h
CK-MB	51	0 – 25 u/l	PDF	++++	-
LDH	351	135 – 225 u/l	Fibrinogen	541	200 – 400 mg%



Fig. 1. Abdominal simple x-ray – bilateral obstructing voluminous urolithiasis

The appearance just hours after admission of the patient's next of kin allow the obtainment of the first historical data and this leads to the idea of a possible infection with *Borrelia burgdorferi*. Thus the onset of the symptoms is related to an insect (tick) bite in the scrotum two weeks ago, followed by the appearance of a polymorphous symptomatology that included erythema at the site of the bite, fever, sweating, headache, myalgia, reason why the patient referred to the territorial ER Department, being recommended a urologic assessment for the scrotal erythema. The examination performed by the territorial urologist 5 days before confirmed the scro-

tal lesion, but was limited to the indication of thorough local washing and subsequent reassessment for the lithiasis associated pathology. Progressively in the next few days the patient's general condition became affected, culminating in the abolition of the consciousness the day he came back to the emergency territorial urological unit.

All these anamnesis completions indicate the possibility to associate the bilateral obstructing voluminous urolithiasis with the Lyme disease. To confirm the suspicion of infection with *Borrelia burgdorferi* we dosed the antibodies to Borrelia by the immunochemical method with chemiluminescence detection (CLIA), whose values were high (IgG 55 AU / ml, IgM 9.2 AU/ml). Western blot confirmatory test was not possible.

But until serological results came out the cardiovascular recovery was a priority being obtained with inotropic support, acid-basic and electrolytic regulation, empirical broad-spectrum antibiotic therapy. 16 hours after admission due to the persistent anuria and due to the presence of the bilateral ureterohydronephrosis, the patient was subject to a urologic intervention being performed a bilateral percutaneous nephrostomy with the aspiration of clear urine from both pyelocaliceal systems.

The subsequent development was slow, no diuresis on nephrostomies, with repeated hemodialysis sessions but the patient experienced gradual improvement of the general condition, he regained consciousness, became cooperative and resumed his spontaneous respiration being extubated 48 hours after admission. Blood pressure values stabilized and gradually the hemodynamic support doses were reduced until their complete interruption. 5 days after admission he grad-

ually resumed diuresis, while maintaining nitrogen retention (serum creatinine between 10.6 and 15.3 mg%, CrCl = 5 ml / min) requiring chronic hemodialysis, which was subsequently performed within the dialysis territorial unit.

The reassessment performed 3 weeks after discharge revealed stationary moderate nitrogen retention (urea = 66 mg%, creatinine = 2.2 mg%, CrCl = 46 ml / min). Given the global diuresis (2000 ml / day) the attending physician decided to suspend hemodialysis and assess the patient subsequently in order to decide the urological behavior.

The patient came back after 3 weeks more in the Urology Clinic being reassessed in order to solve the bilateral ureterolithiasis problem. The biological investigations reveals minimum nitrogen retention (urea = 55 mg %, creatinine = 1.57 mg %). The imaging assessment, ultrasound and pyelography assessment confirm the 1 cm right lumbar ureteral calculus and the 4-5 cm left pelvis one, the elimination of the contrast substance and residual distension of the bilateral pyelocaliceal system (fig. 2).

First a push-back of the lumbar ureteral calculus and its percutaneous extraction were performed and subsequently left pelvic ureterolithotomy which was difficult considering the antecedent intervention and the changes of the subjacent ureter. The postoperative evolution was simple with primary wound healing and suppression of bilateral nephrostomy catheter.

More than 6 months after the intervention the patient who had been monitored all along (creatinine=1.5-1.6 mg %), is clinically and imagistically reassessed, the success of the interventions performed being thus revealed (fig. 3).



Fig. 2. Intravenous pyelography – bilateral urolithiasis

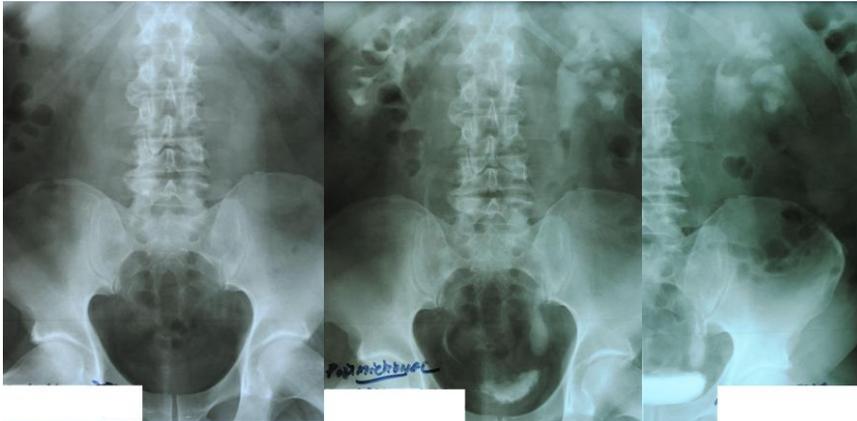


Fig. 3. Intravenous pyelography – control

DISCUSSION

Urologist's coping with Lyme disease is really unusual, a rarity of the ambulatory or emergency medical work; nonetheless, in the case presented herein, it reminds the necessity of a deep and thorough analysis of each clinical case. The challenge for physicians and patients consists of the rapid recognition and appropriate treatment of infection, especially in patients with non-specific clinical manifestations (1, 2).

Analyzing retrospectively the succession of events, we could say that the examination of the scrotum at a first evaluation correlat-

ed with a thorough anamnesis should raise the suspicion of a Lyme disease. The rapid evolution of symptoms and the impairment of the general condition made the patient to present for evaluation at the territorial emergency department; this department, based on the evaluation protocol, emphasized organ and system multiple failure, considered a consequence of the evolution of the sepsis with urinary starting point (infected lithiasic bilateral ureterohydronefrosis). The invalidation of these assumptions about the cause of the organ and system multiple failure (MSOF) is based on several arguments: first

of all, the sequence of events reported by the patient's next of kin and subsequently by the patient (the event that triggered the suffering being the tick bite in apparent health status), then the absence of any urinary-type symptomatology (absence of changes in the appearance of urine, absence of back pain symptoms) and. Finally, aspiration of clear urine from the bilateral pyelocaliceal system in the moment of the external urinary derivation in postponed emergency and microbiological confirmation of its sterility at that time.

The morpho-pathological substrate of the renal impairment in Lyme disease is represented by the membrano-proliferative glomerulonephritis with or without interstitial nephritis (3). This post-infectious event seems to be based on a mechanism using circulating immune complexes, fact evidenced in dogs and in some cases in humans (3, 4, 5).

The clinical testing for Lyme disease remains a matter of controversy (6). The Centre for Disease Control and Prevention in the United States recommends using a dual algorithm: screening by indirect immunofluorescence or enzyme immunoassay

test, followed by confirmation through Western blot. Although this approach has a high specificity, the sensitivity of the dual algorithm of diagnosis for patients with Lyme disease at 4-6 weeks at least after infection is of only 44-56%, making it unsuitable for a clinical diagnosis test. Therefore, according to the Centre for Disease Control and Prevention in the United States, the diagnosis of Lyme disease is based primarily on the clinical data, on the exposure to the bite in an endemic area, as well as on the high level of anti-Borrelia antibodies (7). In the presented case, lacks from organizational reasons the serological confirmation by Western blot, this test being unavailable in our center.

CONCLUSIONS

The case presented herein identifies several challenges encountered by the urologist in terms of diagnosis and treatment of Lyme disease associated with urolithiasis. Although Lyme disease remains a controversial entity, its diagnosis is based on the history of the exposure to tick bites, as well as on the clinical examination, combined or not with serological tests.

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