Serious clopidogrel associated renal hematoma in a type 2 diabetic patient with primary hyperparathyroidism after extracorporeal shock wave lithotripsy

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ABSTRACT

Renal hematoma after extracorporeal shock wave lithotripsy (SWL) is a rare complication. We report a case of a large renal hematoma following SWL that resulted in nephrectomy in a type 2 diabetic patient with primary hyperparathyroidism using clopidogrel due to coronary heart disease (CHD). Although it was claimed that preoperative use of clopidogrel was not associated with increased bleeding, all patients who are scheduled for SWL should be interrogated in terms of using of platelet aggregation inhibitors such as clopidogrel, and these drugs should be interrupted appropriately before undergoing SWL.

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Extracorporeal shock wave lithotripsy (SWL) has led to a revolution in the care of patients with urinary calculi. Renal hematoma post-SWL is a rare complication with an incidence rate of 0.28%.[1,2] The main risk factors are hypertension, clotting disorders and previous SWL sessions. The management is usually conservative.[2] It was reported that aspirin ingestion acts as a potential predisposing factor in the formation of bilateral renal hematoma, but the new platelet aggregation inhibitors, such as clopidogrel are not clear.[3,4] Current protocols state that warfarin should ideally be discontinued 10 days before SWL, while other antithrombotic drugs, including aspirin and clopidogrel, are not.[5] There is only one case report about clopidogrel and renal hematoma after SWL in the literature.[5] We report a case of renal hematoma after SWL in a type 2 diabetic patient using clopidogrel alone for coronary heart disease (CHD) which culminated in unilateral nephrectomy.

Case Report. A 45-year-old type-2 diabetic man with CHD was admitted to the Endocrinology department due to nausea, vomiting, dizziness and weakness. He was using clopidogrel alone at the dose of 75 mg/d for the last 4 months due to CHD, and oral hypoglycemic agent (gliclazide at the dose of 120 mg/d) due to diabetes mellitus for 2 years. In the history, we learned that he underwent SWL (Direx Nova Lithotriptor) for renal calculus without cessation of clopidogrel on the same day in the outpatient urology clinic. He had received a total of 1000 impulses at 18kV in a single section. His complaints started 6 hours after the SWL procedure. Physical examination revealed unstable hemo-

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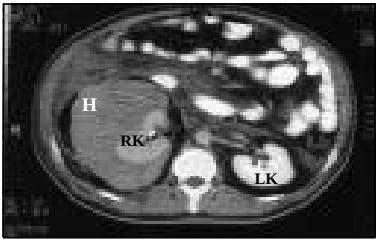

Figure 1 - Large subcapsular hematoma in the right kidney on abdominal CT (H - hematoma, RK - right kidney, LK - left kidney).

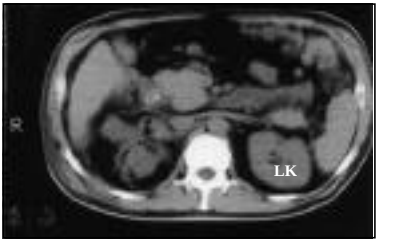

Figure 2 - Abdominal CT of the patient after right nephrectomy (LK - left kidney).

dynamic status (blood pressure was 70 mm Hg and 40 mm Hg, body temperature 37°C, with abdominal tenderness. Hemoglobin: 9.4 g/dL, hematocrit: 27%, white blood cells: 14700/ml, platelets: 412.000/µL. Blood glucose: 397 mg/dL, sodium: 128 mEq/L, potassium: 4.2 mmol/L, calcium (Ca): 12.5 mg/dL, phosphate (P): 2.1 mg/dL, alanine aminotransferase: 28 IU/ml, aspartate transaminase: 26 IU/ml, creatine kinase: 39.46 IU/L, parathyroid hormone (PTH) 156 pg/ml (normal range:17-73 pg/ml). Bleeding time was 11 minutes with Ivy method and prothrombin time was 11 seconds. Abdominal ultrasound and CT revealed a large cystic mass around the right kidney; a large subcapsular hematoma (**Figure 1**). He was followed by the endocrinology and urology departments. Urologists attempted a conservative approach (absolute bed resting, antibiotics and hematocrit follow up) and all drugs which can increase bleeding risk including clopidogrel and gliclazide were immediately stopped; insulin, blood transfusion, fluid and electrolytes were started. Six units of whole blood was transfused in 24 hours, but the decrease in hematocrit levels continued (hemoglobin was 6.1 g/dL and hematocrit was 21%). Hereupon, urologists proceeded to laparotomy which showed that the right kidney was wounded in the middle pole at grade 3, so right nephrectomy was performed (**Figure 2**). After the nephrectomy, he did not need any further blood transfusion. All biochemical (apart from Ca and P) and hemodynamic parameters returned to normal levels, and the patient was discharged with recovery from hospital on the 5th day following nephrectomy. We determined sustained hypercalcemia, hypo-phosphatemia and high PTH levels in the patient. Ultrasonographic examination revealed an adenomatous lesion in the left inferior parathyroid gland. He was accepted as a case of primary hyperparathyroidism and parathyroidectomy was performed.

Discussion. We reported a case of a large subcapsular renal hematoma following SWL that resulted in nephrectomy. Complications of SWL are rare. We could find only one published report of renal subcapsular hematoma associated with clopidogrel and SWL in literature searching.[5] Experience in patients with coagulopathy undergoing any intervention for stone treatment is limited to case reports and patients on anti-platelet therapy. Our patient was using clopidogrel alone for the last 4 months. The SWL had been performed without interruption of clopidogrel in our patient mistakenly. Although it was suggested that pre-operative use of clopidogrel was not associated with increased bleeding, caution is advised and close follow-up recommended in patients who have taken clopidogrel alone or in combination with aspirin-containing compounds following SWL. Elective management is conservative in renal hematoma. Despite the initial conservative approach of blood transfusion and stabilization of the patient's condition, nevertheless, this deteriorated with further drop in hematocrit necessitating laparotomy and nephrectomy. In addition, application of SWL without interruption of clopidogrel may also be responsible for insufficiency of conservative treatment, and therefore, nephrectomy. We determined sustained hypercalcemia, hypophosphatemia, high PTH level and an adenomatous lesion in the left inferior parathyroid gland of the patient. The patient was accepted as a case of primary hyperparathyroidism and parathyroidectomy was performed. Therefore, renal stones must have been the result of parathyroid adenoma.

We recommend that patients planned for SWL must be interrogated in terms of platelet aggregation inhibitors, and these drugs should be interrupted appropriately before SWL, if they are used.

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