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CLINICAL CASE

Trans-splenic puncture during percutaneous nephrolithotomy: Outcome spectrum of the same complication

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KEYWORDS
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Abstract Percutaneous nephrolithotomy is an endourologic technique commonly used in the management of nephrolithiasis. However, this procedure is not complication-free. Splenic injury is exceptionally rare with a reported rate of 1% from the total case load. We present herein two cases of splenic puncture during percutaneous nephrolithotomy that illustrate two different outcomes. In the first case, the patient remained asymptomatic and was discharged on her third post-operative day after removing the nephrostomy, without any sign of hemodynamic compromise. In the second case, the patient presented with hemodynamic instability and an abdominal computed tomography scan was done that showed free fluid in the peritoneal cavity. Emergency laparotomy was performed and revealed a deep peripheral laceration (20 mm × 5 mm in length) that required splenectomy. After a thorough review of the existing literature, we could find only 11 other instances of injury to the spleen in which treatment outcomes were reported. Patient hemodynamic status was the main factor in deciding on the type of treatment.

PALABRAS CLAVE
Percutánea;
Nefrolitotomía;
Complicación;
Punción trans-esplénica

Punción transesplénica durante nefrolitotomía percutánea. Espectro de resultados de la misma complicación

Resumen La nefrolitotomía percutánea es una técnica endourológica de uso común en el tratamiento de nefrolitiasis, sin embargo, este procedimiento no está libre de complicaciones. La lesión esplénica es excepcionalmente rara, con una tasa de presentación del 1% de la carga

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total de procedimientos. El objetivo del trabajo es describir los distintos resultados clínicos de 2 pacientes con la misma complicación y compararlos con los casos reportados en la literatura. Presentamos 2 casos de punción esplénica durante nefrolitotomía percutánea que ilustran 2 resultados diferentes. En el primer caso, el paciente permaneció asintomático y fue dado de alta en su tercer día postoperatorio después de retirar la nefrostomía, sin ningún signo de compromiso hemodinámico. En el segundo caso, el paciente presentó inestabilidad hemodinámica y se le realizó una TC abdominal que mostró líquido libre en la cavidad peritoneal, por lo que fue necesario una laparotomía de urgencia donde se encontró una laceración profunda periférica en bazo (20 × 5 mm) que requirió esplenectomía. Después de una revisión exhaustiva de la literatura existente, solo pudimos encontrar otros 11 casos de lesiones de bazo que informaron los resultados del tratamiento, siendo el estado hemodinámico del paciente el principal factor para decidir el tratamiento.

Introduction

Percutaneous nephrolithotomy (PCNL) is an endourologic technique commonly used in the management of nephrolithiasis. However, this procedure is not complication-free[1] and the majority of complications are related to the percutaneous access phase (about 83%).[2]

Injury to the intraperitoneal organs during PCNL is rarely encountered, but can be a devastating and potentially life-threatening complication with severe morbidity, given that numerous viscera lie within the path of the intended percutaneous access tract. Injury to the hollow viscera, such as the colon, can occur in 0.2–1% of patients undergoing percutaneous access. Nevertheless, splenic injury is exceptionally rare, with a reported rate of 1% of cases. Because it is very uncommon,[3] the accepted management for this complication is controversial and either conservative management or splenectomy are currently the mainstay treatment options. We present two cases of splenic puncture during PCNL that illustrate two completely different outcomes.

Case 1

A 60-year-old woman presented with a 24 mm kidney stone (1000 HU) located in the renal pelvis that was incidentally diagnosed through a computed tomography (CT) scan. In the prone position, a tract through the eleventh intercostal space was made under fluoroscopic guidance, dilating the balloon to 30 Fr. No incidents were observed during the procedure.

On postoperative day 1, the patient remained asymptomatic. A control CT scan showed the nephrostomy tube traversing the lower third of the spleen (Fig. 1). The patient's hemoglobin level dropped from a preoperative level of 12.6 g/dl to postoperative 9.9 g/dl, with no need for transfusion. The patient was discharged on her third postoperative day after removing the nephrostomy tube, without any sign of hemodynamic compromise.

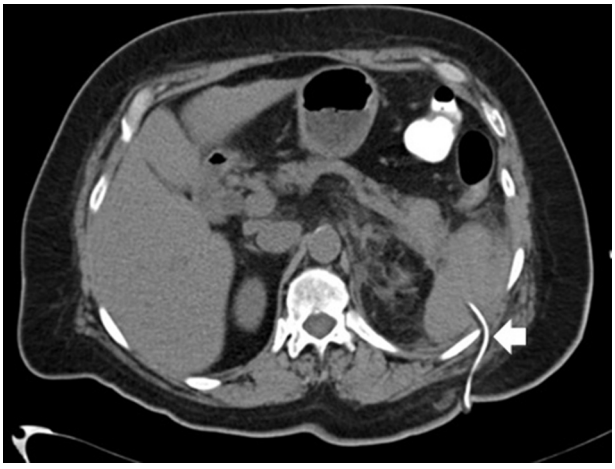

Figure 1 Case 1. Post-PCNL CT scan. Arrow shows the nephrostomy tube traversing the spleen.

Case 2

An 81-year-old woman underwent PCNL after finding a stone (20 mm) (1400 HU) located in the left ureteropelvic junction. In the prone position, a tract through the 11th intercostal space was made under fluoroscopic guidance, dilating the balloon to 30 Fr. No incidents were observed during the procedure.

After arriving at the post-anesthesia care unit, the patient developed significant hypotension, diaphoresis, and muffled respiratory sounds in the left hemi-thorax. She responded to initial i.v. crystalloid infusion. Complete blood count reported hemoglobin of 7 g/dl. A chest X-ray was done that revealed left hemothorax. A pleural catheter was placed that drained 600 cc of blood and transfusion was begun.

Due to the patient's rapid symptom presentation, the tract location and the amount of fluid needed for resuscitation. An abdominal CT scan was performed (Fig. 2) to rule out additional sources of blood loss. It showed free fluid in