CASE REPORT

Spontaneous Ruptured Lumbar Artery in a Chronic Renal Failure Patient

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Introduction

Lumbar artery injuries are encountered infrequently in cases of trauma without lumbar spine or pelvic fractures.\(^1\)\(^5\) These patients tend to develop a lumbar artery pseudoaneurysm, which can be treated by open repair or by selective angiographic embolization. To the best of our knowledge, there is no report of the spontaneous rupture of a lumbar artery without a history of trauma. Although spontaneous lumbar artery rupture is rare, it should be considered as a cause of spontaneous retroperitoneal bleeding in chronic renal failure.

We report a case of retroperitoneal hemorrhage due to lumbar artery rupture without previous traumatic injury, in a primarily chronic renal failure patient treated with haemodialysis and steroids. The patient was successfully treated by selective angiographic embolization. We emphasize the importance of diagnostic vascular investigation in a chronic renal failure patient with unexplained haemodynamic instability, including computerized tomography, angiography, and interventional therapeutic measures such as selective embolization.

Case Report

A 72-year-old woman with chronic renal failure was admitted for routine hemodialysis. After 2 h on dialysis, she complained of an aching pain in the left lower quadrant of the abdomen. Initial evaluation showed a pulse rate of 90 and a blood pressure of 130/80 mmHg. Physical findings revealed local tenderness on the left lower quadrant of the abdomen, but no rebound.

The patient immediately underwent computerized tomography (CT) of the abdomen and pelvis, which showed a large retroperitoneal haematoma. Ten hours later, the patient became tachycardic with a blood pressure of 100/70 mmHg. The haemoglobin decreased from 11 g/dl to 8.7 g/dl, the haematocrit decreased from 33 to 25.2 mg%. The serum chemistries were abnormal, including Urea 114, Creatinine 4.7, Bilirubin 2.1, and coagulation parameters such as PT 13.8%, PTT 43.2 and INR 1.17. The patient was treated by intravenous saline and cross-match blood transfusion.

Since the patient remained haemodynamically unstable over the next 8 h, angiography was performed and this showed extravasation bleeding from the left lumbar artery. Selective angiographic embolization of the lumbar artery was successfully performed and the patient became stable. Two days later, the patient developed multi-organ failure without evidence of hypovolaemia and died.

Discussion

Rupture of the lumbar artery is usually associated with pelvic or lumbar spine fracture.\(^6\)\(^7\) In contrast, lumbar artery rupture without pelvic or lumbar spine fracture is rare and only a few cases have been reported.\(^1\)\(^5\) In these cases, the injury mechanism was blunt trauma or penetrating trauma, leading to pseudoaneurysm formation with a delay in diagnosis of 8 days to 8 months. Spontaneous rupture without
previous abdominal trauma from the lumbar artery has not been described in the English-language literature. As opposed to lumbar artery rupture where previous abdominal trauma exists, pseudoaneurysm of the lumbar artery associated without a history of injury can lead to a delay in diagnosis. In our patient there was no abdominal trauma and the only risk factor was chronic renal failure. Bleeding in chronic renal failure can be caused by uraemic thrombocytopenia or direct injury to the vascular intimal layer. There are few reports in the vascular literature on spontaneous bleeding in chronic renal failure. We assumed that the pathological mechanism in our case was a high urea level, since there were no other pre-existing risk factor such as an aneurysm.

Computerized tomography (CT) was useful in the initial evaluation, and revealed retroperitoneal haemorrhage. An abdominal aortogram is an essential part of the evaluation procedure if the patient is haemodynamically stable. On arteriography, lumbar artery extravasation is demonstrated and a lumbar artery aneurysm may be visualized if such exists. The treatment can be by open repair or selective angiographic embolization. The latter is associated with lower morbidity and a reduction in surgical complications as compared with emergency laparotomy and arterial repair.

In conclusion, in a chronic renal failure patient with haemodynamic instability due to hypovolemic shock, spontaneous bleeding should be considered even if there is no previous trauma and no evidence of pre-existing vascular disease. Although it is very uncommon, it is important to recognize that spontaneous vascular bleeding can occur in a chronic renal failure patient.

References