

1. Abstract “Subsequently, coil embolisation were performed successfully.” For both arteries?

Answer: Yes.

2. Full paper “Finally, a 20-F sheath was positioned, and a holmium laser lithotripter with continuous irrigation was inserted into the sheath. After the completion of PCNL, a 20-F nephrostomy tube was inserted.” Nephrostomy tubes are placed through the sheath. How can the sizes of both be equal?

Answer: In PCNL, the sheath and nephrostomy tube are of uniform size.

3. “After about 24 hours, extensive bleeding occurred through the catheter again.”

You mean hematuria?

Answer: Yes.

4. Why would there be hematuria with lumbar artery injury?

Answer: During nephrostomy tube removal on the sixth postoperative day, the fistula from skin to the renal pelvis had formed. Blood only flows to the pelvis when Vaseline gauze was packed into the skin and eventually forms the hematuria.

5. How can you guess that these two lumbar arteries were along the nephrostomy tract?

Answer: All arteries on the access tract can be injured. To avoid any missed diagnoses, the suspected arteries were examined by angiography.

6. Is there a possibility of injury to these vessels at the time of angiography by forceful contrast injection or by the guidewire?

Answer: We don't think so. First, the guidewire had been never placed into the branches of the lumbar artery before hemorrhages were found. Second, it's almost impossible to blood vessels damaged by forceful contrast injection during normal

operations. Finally, it should appear as arterial laceration (contrast agent leakage) rather than pseudoaneurysm or arteriovenous fistula, if the injury to these vessels at the time of angiography by forceful contrast injection or by the guidewire.

7. What is the usual gap (distance) between 2 lumbar arteries? How can you explain injury to two by one puncture? I expected a retroperitoneal hematoma rather than hematuria with injury to these 2 vessels.

Answer: The distance varies from person to person. In this case, only one puncture was performed. During nephrostomy tube removal on the sixth postoperative day, the fistula from skin to the renal pelvis had formed. Blood flows to the renal pelvis through fistula rather than retroperitoneal area when Vaseline gauze was packed into the fistula and eventually forms the hematuria.

8. In retrospect, what was the chance that the bleeding would have stopped spontaneously (in view of small size of vessels).

Answer: Clot formation at variable intervals and intermittent ruptures when an artery is injured are characteristic of arterial pseudoaneurysm. The main clinical manifestation was intermittency hematuria. In view of small size of vessels, it has the chance that the bleeding would have stopped spontaneously. But clinicians and patient always prefer to cure it more actively.

9. What management do you suggest to others if the same problem is encountered again?

Answer: This case is being reported to inform clinicians that lumbar artery damage is one of the causes of severe bleeding after PCNL, and could involve damage of more than one artery. Therefore, angiography/embolisation should be performed carefully and patiently to avoid any missed diagnosis and mistreatment.