CASE REPORT

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Traditional massage therapy-induced traumatic rupture of hydronephrosis secondary to ureteral obstruction: a case report

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ABSTRACT

Introduction: The vast majority of renal injuries occurred by blunt mechanisms with fall and motor vehicle crashes. Massage therapy is widely used as traditional medicine and has been viewed as a safe treatment tool without major complications or side effects. Renal rupture due to traditional massage therapy is a rare complication. Moreover, it occurs even less commonly considering the anatomical location of the kidneys, where they are well-protected. The purpose of this article is to present a case of a patient with an acute ruptured kidney due to traditional massage therapy four hours before admission to the hospital.

Case description: A 52-years-old man came to the emergency department with right upper and lower abdominal pain. The pain began in the flank region and spread to the right lower abdomen. He visited a traditional massage therapist and received massage therapy in the abdominal and back region with no history of other trauma or other activities before admission. The hemodynamic status was unstable. Physical examination revealed tenderness in the right upper and lower abdominal region and bulge area at the right flank region. We performed an emergency laparotomy due to hemodynamic instability. Right retroperitoneal exploration revealed active bleeding from a ruptured right kidney. Thus right nephrectomy was performed. Post-operative non-contrast CT scan showed ureteral obstruction due to the presence of right distal ureteral stone

Conclusion: Kidneys with anatomical abnormalities such as hydronephrosis and blunt abdominal trauma may increase pressure in the hydronephrotic renal pelvis and cause a rupture. We suggest that surgeons should be cautious of the possibility of renal rupture in blunt trauma due to the change of normal morphological structure of the kidney and attenuation of the renal parenchyma.

Keywords: Massage therapy, Blunt trauma, Renal rupture, Hydronephrosis, Ureteral obstruction
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INTRODUCTION

The kidney is the most often damaged genito-urinary organ and occurs in around 1-5 percent of all trauma.[1] The vast majority of renal injuries occurred by blunt mechanisms with falls and motor vehicle crashes.[2] Fortunately, compared to high-grade blunt renal trauma, most forms of blunt renal trauma are low-grade injuries.[1] For penetrating trauma, only 4-8% of the patients admitted to the hospital experience renal trauma.[2] Massage therapy is widely used as traditional medicine and has been viewed as a safe treatment tool without major complications or side effects.[3] The purposed of this article is to present a case of a patient with an acute ruptured kidney due to traditional massage therapy four hours before admission to the hospital.

CASE DESCRIPTION

A 52-years-old man came to the emergency department with right upper and lower abdominal pain, and the symptoms were accompanied by nausea, fatigue, and dizziness. Four hours before admission, he visited a traditional massage therapist and received massage therapy in the abdominal and back regions. The pain began in the flank region and spread to the right lower abdomen. There was no history of other trauma or other activities before admission to the hospital. He had a history of open right renal surgery one year ago due to multiple nephrolithiasis.

On arrival to the emergency department, hemodynamic status was unstable; fluid resuscitation had been performed but showed a transient response. Physical examination revealed tenderness in the right upper and lower abdominal region and bulge area at the right flank region (**Figure 1**). A 16 Fr Foley Catheter was inserted through the urethra, and light-yellow urine with no sign of hematuria was observed.

Laboratory result showed hemoglobin 10.8 g/dl, hematocrit 31%, white blood count 19,100/mm^3, platelet 433,000/mm3. The patient had a history of chronic

kidney disease with blood urea nitrogen 90 mg/dl and creatinine 5.7 mg/dl. Due to hemodynamic instability, we decided to perform emergency laparotomy surgery on the patient. During surgical exploration, intraperitoneal organs were intact, and right retroperitoneal exploration revealed active bleeding from ruptured right kidney; thus, a right nephrectomy was performed. The parenchyma of the right kidney was thin and showed dilatation of the pelvicalyceal system due to ureteral obstruction (Figure 2). The patient was observed at the intensive care unit, recovered well, and discharged from the hospital on the 5th post-operative day. A post-operative non-contrast CT scan showed ureteral obstruction due to the right distal ureteral stone (Figure 3).

Figure 1. Erythematous and swelling at the right flank region

Figure 2. Ruptured of the right kidney with dilated pelvicalyceal system

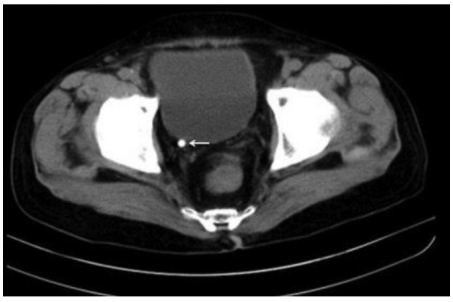

Figure 3. Post-operative abdominal CT scan of the abdomen. Arrow showing right distal ureteral stone

DISCUSSION

Traditional massage therapy is common amongst adults and the elderly in Indonesia, especially for soreness and pain in the lower back region. Usually, patients who had these complaints seek medical care, but when surgical treatment had to perform for their conditions, few decided to seek alternative therapy such as massage therapy.[3]

Renal rupture due to traditional massage therapy is a rare complication. Moreover, it occurs even less commonly considering the anatomical location of the kidneys, where they are well-protected. Massage therapy can cause traumatic complications such as intramural distal jejunum hematoma due to abdominal massage.[3] In this case, the patient, went to a traditional massage therapist four hours before admission to the hospital and received a hard pressure massage at the back and abdominal region.

Blunt abdominal trauma may increase pressure in the hydronephrotic renal pelvis and cause a rupture, as reported by Nerli et al. Another case report by Zhang et al. reported a patient with hydronephrotic kidney detected on ultrasonography examination suffered from spontaneous rupture of the right renal pelvis.[4] The patient had a history of kidney stone surgery with flexible ureterorenoscopy combined with holmium laser one-month ago.[5]

CONCLUSION

In our case, hydronephrosis was caused by ureteral obstruction due to the right distal ureteral stone, which makes the kidney vulnerable to blunt trauma. We suggest that emergency physicians and surgeons should be cautious of the possibility of renal rupture in blunt trauma due to the change of normal morphological structure of the kidney and attenuation of the renal parenchyma.

CONFLICTS OF INTEREST

There is no conflict of interest

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ETHICAL STATEMENT

The patient already gave permission and written consent to be published

AUTHOR CONTRIBUTION

All authors contributed equally to this article

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