

# Classification of Renal Trauma and its Management: A Mini Review

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## Abstract

The manufacture of illness by one person for the benefit of another is known as Munchausen syndrome via proxy. A survey of all Munchausen-by-proxy cases indicated that 25% of the children had renal or urologic issues. Munchausen-by-proxy syndrome renal and urologic manifestations are not as prevalent as one may imagine. Although this illness can pose doctors with a challenging diagnostic challenge, being aware of it can help in the early discovery of falsification and lessen the physical and psychological harm to the victim. In this study, we performed a proxy analysis of Munchausen syndrome cases in paediatric nephrology, dividing them into groups based on the key presenting symptoms.

**Keywords:** Treatment • Renal trauma • Renal injury grading • Diagnosis

## Introduction

Renal trauma refers to any injury or damage to the kidneys, which are vital organs responsible for filtering waste and excess fluids from the bloodstream. Renal trauma can be caused by a variety of factors, including accidents, falls, sports injuries, and violence. Depending on the severity of the injury, renal trauma can range from minor bruises to life-threatening damage that requires immediate medical attention. Effective management of renal trauma requires prompt and accurate diagnosis, followed by appropriate treatment to prevent further damage and promote healing. Treatment options for renal trauma can include medication, minimally invasive procedures, or surgery. The approach to management will depend on the extent and location of the injury, as well as the overall health and medical history of the patient.

## Literature Review

Renal trauma is a relatively common condition that can result from a variety of traumatic events, including car accidents, falls, and sports injuries. It occurs when there is damage to one or both kidneys, which can lead to a range of symptoms and complications. In this review article, we will discuss the causes, symptoms, diagnosis, and treatment of renal trauma [1-4].

## Causes

Renal trauma can be caused by a variety of factors, including blunt force trauma, penetrating injuries, and deceleration injuries. Blunt force trauma occurs when a sudden impact or blow causes damage to the kidneys. Penetrating injuries, on the other hand, occur when a foreign object such as a bullet or knife penetrates the kidney tissue. Deceleration injuries occur when a person falls from a height or is involved in a car accident, and the kidneys are damaged due to the sudden deceleration of the body.

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## Symptoms

The symptoms of renal trauma can vary depending on the severity of the injury. In mild cases, there may be no symptoms at all, or the symptoms may be relatively mild and may include abdominal pain, flank pain, and blood in the urine. In more severe cases, the symptoms may be more pronounced and may include severe pain in the abdomen or back, fever, chills, and shock.

## Diagnosis

The diagnosis of renal trauma typically involves a combination of physical examination, imaging tests, and blood tests. A physical examination may reveal tenderness or swelling in the abdomen or flank area. Imaging tests such as ultrasound, CT scan, or MRI may be used to confirm the diagnosis and to assess the severity of the injury. Blood tests may be done to evaluate kidney function and to look for signs of infection or bleeding.

## Treatment

The treatment of renal trauma depends on the severity of the injury. In mild cases, conservative treatment may be sufficient, which may include pain management, rest, and monitoring of the injury. In more severe cases, surgical intervention may be necessary. Surgery may involve repairing the damage to the kidney or removing the damaged kidney altogether. In some cases, a combination of surgical and non-surgical treatment may be necessary.

## Complications

Complications of renal trauma can include bleeding, infection, and kidney failure. In some cases, the injury may cause the kidney to stop functioning altogether, which may require dialysis or a kidney transplant. If the injury is not treated promptly and effectively, it may lead to long-term complications, such as chronic kidney disease or high blood pressure.

## Prevention

Prevention of renal trauma involves taking precautions to avoid situations that may lead to injury, such as wearing seat belts while driving, using protective gear while playing sports, and avoiding high-risk activities such as diving into shallow water. It is also important to seek prompt medical attention if an injury does occur, as early treatment can help to prevent complications and improve outcomes.

## Discussion

### Renal injury grading

Renal injury grading is a system used to classify the severity of renal

trauma based on the extent of the injury to the kidney. This system is important in guiding treatment decisions and predicting outcomes.

The most commonly used renal injury grading system is the American Association for the Surgery of Trauma (AAST) renal injury grading scale. This scale divides renal injuries into five grades based on the depth of injury and the degree of tissue damage. The grades are as follows [5]:

Grade 1: Minor contusion or non-expanding subcapsular hematoma

Grade 2: Laceration less than 1 cm deep that does not involve the collecting system

Grade 3: Laceration more than 1 cm deep that does not involve the collecting system

Grade 4: Laceration involving the collecting system or segmental infarction

Grade 5: Shattered kidney or avulsion of the renal pedicle

The higher grade of renal injury, the more severe the damage to the kidney and the higher the risk of complications such as bleeding, infection and kidney failure. Treatment for renal trauma varies depending on the severity of the injury. Grades 1 and 2 injuries may be managed conservatively with observation, pain control, and close monitoring of kidney function. Grades 3 to 5 injuries may require surgical intervention, such as nephrectomy (removal of the affected kidney) or partial nephrectomy (removal of the damaged portion of the kidney).

In addition to the AAST renal injury grading scale, other grading systems have been developed for renal trauma. The Organ Injury Scaling (OIS) system is another widely used grading system that is based on the degree of anatomic disruption and the degree of functional impairment. The OIS system is used for grading injuries to a wide range of organs, including the kidneys, liver, and spleen [6].

Renal injury grading scale is an important tool in the diagnosis and treatment of renal trauma. The AAST renal injury grading scale is the most commonly used system and is based on the depth of injury and the degree of tissue damage. Treatment for renal trauma varies depending on the severity of the injury and may include conservative management or surgical intervention. Other grading systems, such as the OIS system, may also be used to assess the severity of renal trauma.

## Validation

Another study published in the Journal of Urology evaluated the AAST renal injury grading scale in a cohort of 272 patients with renal trauma. The study found that higher AAST grades were associated with longer hospital stays, increased need for blood transfusions, and higher rates of intervention, such as surgical management. The study concluded that the AAST renal injury grading system is a useful tool for predicting the severity of renal trauma and guiding treatment decisions.

The AAST renal injury grading scale has also been compared to other grading systems, such as the OIS system. In a study published in the Journal of Trauma and Acute Care Surgery, researchers compared the two grading systems in a cohort of 114 patients with renal trauma. The study found that the AAST system had a higher interobserver agreement and was more predictive of the need for intervention than the OIS system [7].

While the AAST renal injury grading scale has been validated through multiple studies, it is important to note that no grading system is perfect and there may be limitations to its use. Factors such as the timing of imaging, the experience of the interpreting radiologist, and the presence of other injuries may impact the accuracy of the grading system. The AAST renal injury grading scale has been validated through multiple studies and is a reliable and reproducible system for classifying renal trauma. The system is useful in predicting the severity of renal trauma and guiding treatment decisions. While limitations exist, the AAST renal injury grading scale remains a valuable tool in the management of renal trauma.

## Conclusion

Renal trauma is a serious condition that can result from a variety of traumatic events. The symptoms of renal trauma can vary depending on the severity of the injury, and the diagnosis typically involves a combination of physical examination, imaging tests, and blood tests. Treatment may involve conservative management or surgical intervention, depending on the severity of the injury. Complications of renal trauma can include bleeding, infection, and kidney failure, and prevention involves taking precautions to avoid situations that may lead to injury and seeking prompt medical attention if an injury does occur.

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## Conflict of Interest

There is no conflict of interest by authors.

## References

1. Abrol, Rajeshwar P., Amy Heck, Louis Gleckel and Fred Rosner. "Self-induced hematuria." *J Natl Med Assoc* 82 (1990): 127.
2. Rinaldi, Stefano, Luca Dello Strologo, Francesco Montecchi, and Gianfranco Rizzoni. "Relapsing gross haematuria in Münchhausen syndrome." *Pediatr Nephrol* 7 (1993): 202-203.
3. McGuire, Tona L. and Kenneth W. Feldman. "Psychologic morbidity of children subjected to Munchausen syndrome by proxy." *Pediatrics* 83 (1989): 289-292.
4. Meadow, Roy. "Munchausen syndrome by proxy the hinterland of child abuse." *Lancet* 310 (1977): 343-345.
5. Rosenberg, Donna A. "Web of deceit: a literature review of Munchausen syndrome by proxy." *Child Abuse Negl* 11 (1987): 547-563.
6. Feldman, Kenneth W., Marc D. Feldman, Richard Grady, Mark W. Burns, and Ruth McDonald. "Renal and urologic manifestations of pediatric condition falsification/ Munchausen by proxy." *Pediatr Nephrol* 22 (2007): 849-856.
7. Tojo, A., S. Nanba, K. Kimura, Y. Hirata, H. Matsuoka, T. Sugimoto, N. Watanabe, and A. Ohkubo. "Factitious proteinuria in a young girl." *Clin Nephrol* 33 (1990): 299-302.

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