

# A Rare Complication After Renal Cyst Aspiration: Distal Catheter Fragment Remaining Within the Cyst Wall and Laparoscopic Treatment

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## Abstract

Simple renal cysts are the most common renal lesions. Percutaneous renal cyst aspiration is an effective and minimally invasive treatment option for symptomatic lesions. This study aims to present the laparoscopic management of the catheter fragment that remains within the cyst wall after percutaneous cyst aspiration with sclerotherapy.

**Keywords:** Cystic renal disease, laparoscopic surgery, sclerosing agents

## Introduction

Simple renal cysts are a common type of benign lesion found in the kidneys, with a prevalence ranging from 5% to 20.8% in various studies (1). According to a study by Yasuda et al. (2), 75.3% of simple renal cysts are asymptomatic. However, some patients may experience pain, hematuria, hypertension, and pelviciceal obstruction (1). Treatment options for symptomatic simple renal cysts include percutaneous aspiration with or without sclerosing agents and surgical excision using open, laparoscopic, or robotic techniques (3). All treatment modalities have high efficacy and low complication rates (1).

The aim of this study was to present the laparoscopic treatment of a catheter fragment that remained in the cyst wall after percutaneous renal cyst aspiration with sclerotherapy.

## Case Presentation

A male patient aged 69 years presented with flank pain and underwent computed tomography scan. The scan revealed an 84x81 mm Bosniak type 1 cyst in the right kidney. Flank pain was thought to be caused by a simple cyst, and treatment options were discussed with the patient. We planned renal cyst aspiration according to the patient's preference. Due to the patient's

symptoms, renal cyst aspiration was planned. Under local anesthesia, a pigtail catheter was inserted into the right kidney under ultrasound guidance, and the cyst was aspirated using 95% alcohol as a sclerosing agent. Upon catheter withdrawal, it was noted that the distal end remained in the retroperitoneal area. The decision was made to laparoscopically remove the catheter. The transperitoneal approach was selected due to our greater experience with this approach, and we believe that we would be better equipped to manage potential complications with this approach. The pneumoperitoneum was created using a Veress needle, and entry was via a 10 mm optical port. Under image guidance, 5 mm and 10 mm working ports were placed. The liver was then freed, followed by the posterior aspect of the kidney. Gerota's fascia was opened, and the cyst was visualized. The catheter fragment was accessed and removed through a 10 mm working port after opening the cyst wall. The cyst wall was then excised laparoscopically, and a drain was placed. The Foley catheter was removed on postoperative day 1, and the sump drain was removed on postoperative day 2. Written informed consent was obtained from the patient for publication of the details of his medical case and any accompanying images.

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## Discussion

Imaging-guided percutaneous renal cyst aspiration has been used since the 1970s to treat uncomplicated renal cysts since the 1970s. This procedure is considered minimally invasive, safe, and cost-effective (3). According to a systematic review by Brown et al. (4), the rate of procedure-related complications was 11.2%. The most common complication was pain, and major complications were observed in only 4 cases. In one case, the catheter fragment remained within the cyst wall (5). Based on our search of the PubMed and Google Scholar databases, it is possible that our case is the second in the literature.

## Conclusion

Renal cysts are typically asymptomatic. Percutaneous aspiration is an effective treatment for symptomatic cysts with low complication rates. Catheter breakage is a rare complication that can be treated laparoscopically.



Video 1.

## Ethics

**Informed Consent:** Written informed consent was obtained from the patient for publication of the details of his medical case and any accompanying images.

## Acknowledgements

This article was originally presented as a video at the 8<sup>th</sup> National Minimally Invasive Surgery Congress held in Türkiye from March 7–10, 2024.

## Footnotes

### Authorship Contributions

Surgical and Medical Practices: M.Ö., K.B., L.İ., Concept: M.Ö., M.Y., F.İ., Design: L.İ., Data Collection or Processing: K.B., M.Y., Analysis or Interpretation: M.Ö., L.İ., Literature Search: M.Ö., K.B., L.İ., Writing: M.Ö., F.İ., L.İ.

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