



A CASE OF RECURRENT PERINEPHRIC ABSCESS FROM THE NEPHROSTOMY INSERTION SITE

Andee Dzulkarnaen Zakaria^{1*}, Syed Hassan¹, Shaharaneer Nor Aida², Syed Azhar Syed Sulaiman², Amer Hayat Khan²

¹Department of Surgery, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, Kelantan, Malaysia

²Department of Clinical Pharmacy, School of Pharmaceutical Sciences Universiti Sains Malaysia, Penang, Malaysia

*Corresponding Author Email: andee@kb.usm.my

DOI: 10.7897/2277-4572.02689

Published by Moksha Publishing House. Website www.mokshaph.com

All rights reserved.

Received on: 01/07/13 Revised on: 20/10/13 Accepted on: 14/11/13

ABSTRACT

Perinephric abscess is a pocket of pus caused by an infection around one or both kidneys. The incidence of perinephric abscess is uncommon which ranges from 1-10 cases for every 10,000 individuals. Both men and women are affected with equal frequency. A 46 years old lady being admitted to the surgical ward due to the recurrent perinephric collection and pus discharge from nephrostomy insertion site. Patient has undergone ultrasound guided drainage for 2 times and nephrostomy was performed. Upon admission, IV Cefuroxime 750 mg tds, tablet Ciprofloxacin 250 mg BD and Capsule Tramadol 50 mg was given. The mainstay of treatment is drainage of the abscess and administration of antibiotics to control sepsis and to prevent the spread of infection. Since patient has undergone nephrostomy and the catheter is placed in situ for a long time, she is at high risk of developing sepsis. Therefore an extended period of antibiotic treatment is planned for her. Successful treatment of renal abscess requires the use of appropriate antibiotics along with percutaneous drainage. Early diagnosis and treatment of renal and perinephric abscess is important to prevent complications of septicemia or even death as reported earlier.

Keywords: Abscess, Perinephric, Nephrostomy

INTRODUCTION

Perinephric abscess is a collection of suppurative material in the perinephric space.¹⁻³ The location of perinephric abscesses are between the capsule of the kidney and the Gerota fascia.¹

Diagnosis can be challenging because the chronic form of this condition usually develops insidiously and in some cases its appearance can even simulate a renal tumor. Hence, a rapid and accurate diagnosis is crucial to reduced morbidity and even mortality.^{4,5}

Perinephric abscesses usually occur because of disruption of a corticomedullary intra nephric renal abscess, recurrent pyelonephritis, xanthogranulomatous pyelonephritis, or an obstructing renal pelvic stone causing pyonephrosis.¹ Sign and symptoms of perirenal abscess may include abdominal pain, chills, fever and sweats.¹⁻³ While nephrostomy is a surgical procedure by which a tube, stent, or catheter is inserted through the skin and into the kidney. This method is able to provide nephrostomy drainage in virtually any case of ureteral obstruction or leak, and also indicated for drainage of perinephric fluid collections. The incidence of perinephric abscess is uncommon. It ranges from 1-10 cases for every 10,000 individuals. Among all, patients with diabetes accounts for one third of the perinephric abscess cases. Both men and women are affected with equal frequency.^{1,2,4}

Case Presentation

A 46 years-old lady being admitted to the surgical ward due to the recurrent perinephric collection and pus discharge from nephrostomy insertion site.

Patient also complains that the discharge was producing a foul smelling and she already had fever for 2 days. Patient perinephric collection was noted at the lower pole with the presence of septations. Upon admission, an urgent ultrasound on kidney, ureter and bladder (KUB) was performed and the result revealed that previously perinephric collection still present with similar amount occupying the upper and anterior region. Persistent pus discharge from catheter insertion site

was also note. Laboratory test performed upon admission showed that the hemoglobin (10.1 g/dL) and hematocrit (33.4) value is low.

However, patient does not develop any sign and symptoms of anemia. Other laboratory parameters (white blood cells, MCV, platelet) are within the normal range. Ultrasound guided drainage was done for 2 times, the latest perinephric collection was 1.1 x 5.2 x 6.5 cm while the previous drainage was 7 x 6.7 x 10 cm and patient has undergone nephrostomy. Past clinical history for this patient include bilateral perinephric collection and pyelonephritis. For her social history, patient is a housewife, not a smoker and denies neither alcohol consumption nor any kind of drug allergy. Immediate administration of intravenous, broad spectrum antibiotics and drainage is a standard treatment for perinephric abscess.

Hence, IV Cefuroxime which is a broad spectrum antibiotic that can cover both gram positive and gram negative organism was given to the patient. Tablet Ciprofloxacin was also started and stopped after 3 days. Capsule Tramadol is prescribed due to complaint of abdominal pain by patient. Nephrostomy fluid examination was done and the result is positive for *Acinetobacter* species and *Staphylococcus aureus*. The aspirate culture and sensitivity and biopsy from perinephric abscess are still pending. Patient is currently comfortable, afebrile, alert and conscious and does not complaint any abdominal pain. Tablet Cefuroxime 250 mg is to be completed for 6 weeks as discharge medications.

DISCUSSION

Perinephric abscess is a poorly understood pathogenetic entity. In the past, it was associated with high morbidity and mortality rates.⁵ Predisposing factors include previous urinary tract obstruction with infection, renal calculi, diabetes mellitus, skin infection and chronic illness. About 6 % of patients have no predisposing factors toward perinephric abscess. It is found that, kidney stones are the biggest risk factors for perinephric abscess due to blockage of the urine

flow which consequently provide a place for bacterial growth. Stones are found in 20-60 % of patients with perinephric abscess.^{1-3,6} For this patient, the predisposing factors include previous history of pyelonephritis and kidney stone. The standard therapy for perinephric abscess is drainage. While the use of antibiotics are considered as an adjunct therapy to percutaneous drainage because they help to control sepsis and to prevent the spread of infection.^{1,2,4,6-8} For this patient, she has already undergone an ultrasound guided drainage twice and nephrostomy is done. She also had received intravenous antibiotics which is Cefuroxime 750 mg TDS; since this patient has undergone nephrostomy and currently on catheter tip being placed in situ for a long period, she is at high risk of developing sepsis. Therefore, a 6 weeks course of antibiotics is planned for her as the discharge medication. It was found that sepsis was the most serious complication of nephrostomy which requires significant increase in the level of care.⁹ Bleeding is another common complication in patients undergone nephrostomy. A close monitoring of sign and symptoms of bleeding as well as complete blood count is recommended for this patient. In one of a study conducted, percutaneous drainage of perinephric abscess is considered as a minimally invasive treatment modality. Hence, in a condition where perinephric abscess has to be drained, percutaneous drainage is recommended as the primary drainage method because it able to save 69 % of patients an open surgery. However, in the case of multi locular abscess, open surgical drainage is preferred because higher cure rates, shorter hospitalization and lower recurrence.¹⁰ Culture and sensitivity test of nephrostomy fluid for this patient has been performed and the result is positive for *Staphylococcus aureus* and *Acinetobacter sp.* Gram negative bacterial abscess commonly develops due to rupture of corticomedullary abscess while the staphylococcal infection develops due to rupture of renal cortical abscess.^{1,7} Failure of antimicrobial treatment is often associated with factors such as large abscess, obstructive uropathy, severe vesicoureteral reflux, diabetes, old age and urosepsis with gas forming organism. Complications of renal or perinephric abscess may include development of a sub-diaphragmatic (subphrenic) abscess; empyema; fistula formation to the stomach, small bowel, or lung; puncture (perforation) into the abdominal (peritoneal) cavity or the colon; psoas abscess; or systemic infection (sepsis).¹¹ Nephrectomy or removal of all part of the kidney may be

performed in individuals with severe infection that develop renal failure. Death may occur in late-stage of diagnosis. A long-term monitoring of renal function, maintenance of uninfected urine, staying stone-free and a normotensive status is necessary for this patient. For investigations, routine biochemical and bacteriological laboratory tests mainly suffice, complemented by ultrasonography, in most instances.⁴

CONCLUSION

In conclusion, perinephric abscess is an uncommon incidence. However delayed in diagnosis and treatment is important to prevent complications of septicemia or even death. The mainstay of treatment for perinephric abscess is drainage and an immediate administration of broad spectrum antibiotics.

REFERENCES

1. Shukla, Prem C and Edward David Kim. Perinephric Abscess. Available from: URL: <http://emedicine.medscape.com/article/439831-overview#showall>; 2004.
2. Medical Disability Guidelines. Abscess, Renal and Perinephric; Available from: URL: <http://www.mdguidelines.com/abscess-renal-and-perinephric>; 2012.
3. ADAM Medical Encyclopedia. Peri renal Abscess; Available from: URL: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002253/>; 2010.
4. Robert A Gardiner, Raymond A Gwynne and Sally A Roberts. Perinephric Abscess. British Journal of Urology International 2011; 107(3): 20-23.
5. Melvyn R Conrad, Roger C Sanders and Angelita D Mascardo. Perinephric abscess aspiration using ultrasound guidance. Am. J. Roentgenol 1977; 128: 459-464. <http://dx.doi.org/10.2214/ajr.128.3.459> PMID:402842
6. James Saiki, ND Vaziri and Cyril Barton. Perinephric and Intra nephric Abscesses: A review of the Literature. The Western Journal of Medicine 1982; 136(2): 95-102. PMID:7039139 PMID:PMC1273539
7. Baradkar VP, Mathur M, Kumar S. Renal and Perinephric Abscess Due to *Staphylococcus aureus*. Indian J Pathol Microbiol 2009; 52: 440-1. <http://dx.doi.org/10.4103/0377-4929.55022> PMID:19679989
8. Meng MV, Marie LA, Mc Aninch JW. Current Treatment and Outcomes of Perinephric Abscesses. J Urol 2002; 168: 1337-40. [http://dx.doi.org/10.1016/S0022-5347\(05\)64443-6](http://dx.doi.org/10.1016/S0022-5347(05)64443-6) <http://dx.doi.org/10.1097/00005392-200210010-00007> PMID:12352387
9. Lewis S, Patel U. Major Complication after percutaneous Nephrostomy- lesson from a department audit. Clin. Radiol 2004; 59(2): 171-9. [http://dx.doi.org/10.1016/S0009-9260\(03\)00336-2](http://dx.doi.org/10.1016/S0009-9260(03)00336-2)
10. Ahmed R. et al. What is the Best Drainage Method for A Perinephric Abscess? International Braz J Urol 2010; 36(1): 29-37. <http://dx.doi.org/10.1590/S1677-55382010000100005>
11. Louise Marie Dembry and Vincent T Andriole. Renal and Perirenal Abscess. Infectious Diseases Clinics of North America 1997; 11(3): 663-680. [http://dx.doi.org/10.1016/S0891-5520\(05\)70379-2](http://dx.doi.org/10.1016/S0891-5520(05)70379-2)

Source of support: Nil, Conflict of interest: None Declared

<p>QUICK RESPONSE CODE</p> 	<p>ISSN (Online) : 2277 -4572</p> <p>Website http://www.jpsionline.com</p>
--	--

How to cite this article:

Andee Dzulkarnaen Zakaria, Syed Hassan, Shaharane Nor Aida, Syed Azhar Syed Sulaiman, Amer Hayat Khan. A case of recurrent perinephric abscess from the nephrostomy insertion site. *J Pharm Sci Innov.* 2013; 2(6): 32-33.