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CLINICAL AND LABORATORY CHARACTERISTICS OF PERIRENAL ABSCESS CASES AND THEIR MANAGEMENT

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Abstract

BACKGROUND: Perirenal abscess is a rare disease, often leading to morbidity and mortality due to delay in diagnosis and inadequate treatment. Cases of perirenal abscess in RSUD Soetomo often have been going on for a long time and are severe.

AIM: The purpose of this study was to determine the characteristics of patients with perirenal abscess and their management.

MATERIAL AND METHODS: This research is a descriptive retrospective study. Characteristics of patients with perirenal abscess both clinical, laboratory, and management obtained from medical records at RSUD dr. Soetomo Surabaya during the period 2011-2016 and analyzed using SPSS 20.0.

RESULTS: There were 38 patients with perirenal abscess with the mean age was 46.21 ± 11.74 years. Most of the abscesses were mixed (peri-pararenal) namely 21 patients (55.2%), 15 patients (39.5%) perirenal abscess and 2 patients (5.3%) pararenal abscess. The most risk factors for perirenal abscess were 17 patients (44.7%) with kidney/ureter stones and 15 patients (39.5%) with diabetes. The most frequent clinical symptoms were low back/abdominal pain in 38 patients (100%), mass in the waist/lower abdomen in 36 patients (94.7%) and fever in 28 patients (73.7%), CVA tenderness in 28 patients (73, 7%), and nausea/vomiting in 12 patients (31.6%). From the laboratory, 29 patients (76.3%) were anemic, 28 patients (73.7%) had hypoalbuminemia, and 32 patients (84.2%) had leukocytosis. Management in the form of abscess drainage, namely 35 patients (92.1%) underwent open drainage surgery, 3 patients (7.9%) underwent open drainage surgery and nephrectomy.

CONCLUSION: Perirenal abscess has non-specific clinical signs and symptoms is sometimes difficult to make a diagnosis. Patients with low back/abdominal pain with a lump in the waist and fever lasting more than 5 days may suggest a perirenal abscess and need further diagnostics. Abscess drainage is the best option for the treatment of perirenal abscesses.

Keywords: Perirenal abscess, open drainage

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KARAKTERISTIK KLINIS DAN LABORATORIS KASUS ABSES PERIRENAL BESERTA PENATALAKSANAANNYA

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Abstrak

LATAR BELAKANG: Abses perirenal penyakit yang jarang dijumpai, sering berujung pada morbiditas dan mortalitas karena keterlambatan mendiagnosa dan penanganan yang tidak adekuat. Sehingga kasus abses perirenal di RSUD Soetomo sering sekali sudah berlangsung lama dan parah.

TUJUAN: Tujuan penelitian ini adalah mengetahui karakteristik pasien abses perirenal dan penanganannya.

METODE: Ini merupakan penelitian retrospektif deskriptif. Karakteristik pasien abses perirenal baik klinis, laboratorium, dan penatalaksanaan didapat dari rekam medis di RSUD dr. Soetomo Surabaya selama periode 2011-2016 dan dianalisa menggunakan SPSS 20.0.

HASIL: Didapatkan 38 pasien abses perirenal dengan umur rata-rata 46,21 ± 11,74 tahun. Abses terbanyak berupa campuran (peri-pararenal) yaitu 21 pasien (55,2%), 15 pasien (39,5%) abses perirenal dan 2 pasien (5,3%) abses pararenal. Faktor resiko abses perirenal terbanyak yaitu 17 pasien (44,7%) batu ginjal/ureter dan 15 pasien (39,5%) diabetes. Gejala klinis yang paling sering adalah nyeri pinggang/perut 38 pasien (100%), massa di pinggang/perut bawah 36 pasien (94,7%) dan demam 28 pasien (73,7%), nyeri ketok CVA 28 pasien (73,7%), dan mual/muntah 12 pasien (31,6%). Dari laboratorium didapati 29 pasien (76,3%) anemia, 28 pasien (73,7%) hipoalbumin dan 32 pasien (84,2%) mengalami leukositosis. Penatalaksanaan berupa drainase abses yaitu 35 pasien (92,1%) menjalani operasi *open drainage*, 3 pasien (7,9%) menjalani operasi *open drainage* dan nefrektomi. Tidak ada pasien yang menjalani perkutan drainase maupun hanya antibiotik.

KESIMPULAN: Abses perirenal memiliki gejala dan tanda klinis yang tidak spesifik sehingga terkadang sulit menegakkan diagnosisnya. Pasien dengan nyeri pinggang/perut disertai benjolan pada pinggang dan demam yang berlangsung lebih dari 5 hari dapat dicurigai abses perirenal dan perlu untuk diagnostik lebih lanjut. Drainase abses merupakan pilihan terbaik untuk terapi abses perirenal.

Kata kunci: Abses perirenal, *open drainage*

Introduction

The perirenal abscess is a rare disease. The perirenal abscess is the presence of purulent material in the perirenal cavity which can occur due to the spread of the abscess from the renal parenchyma or due to hematogenous spread from infection outside the kidney. Patients with hydronephrosis, which is usually due to stone obstruction in the kidney, may develop abscesses in the perirenal cavity. Diabetes mellitus is found in about one-third of patients with perirenal abscesses. In one-third of cases, the perirenal abscess is caused by hematogenous spread, usually from the surrounding infected skin.

The perirenal abscess often leads to morbidity and mortality, this is mainly due to delays in diagnosis and inadequate treatment. Doctors often have difficulty in diagnosing this disease because the symptoms of the disease are non-specific, so cases with a perirenal abscess in RSUD Soetomo are often long and severe.

Therefore, this study was conducted so that perirenal abscess can be established as early as possible, so it is necessary to identify both clinical and laboratory characteristics so that it becomes the basis for further diagnosis.

Methods

The method used in this study is a retrospective descriptive, in which patients with perirenal abscess undergoing treatment at RSUD dr. Soetomo Surabaya in a period of 5 years starting from July 1, 2011, to June 30, 2016, will be the sample in this study. Clinical and laboratory data were taken from the patient's inpatient medical records.

The inclusion criteria for this study were perirenal abscess patients (including patients with pararenal abscess, psoas abscess, or mixed abscess) diagnosed based on clinical, laboratory, and radiological results. Meanwhile, the exclusion criteria were if the patient with a perirenal abscess who underwent surgery did not find an abscess and incomplete medical record data.

In data processing, if the data is in the form of intervals and ratios, the data will be displayed in the form of average and standard deviation, for nominal and ordinal data, the data will be displayed in the form of percentages. The data was processed and analyzed using SPSS 20 for Windows computer software.

Results

General Characteristics of Patients

From the study sample, 38 patients with perirenal abscesses were found. The characteristics of patients with perirenal abscess are as shown in table 1 below.

Table 1 Characteristics of patients with perirenal abscess

Variable	Statistics
Age	
Average	46.21 ± 11.74 years
Youngest age	12 years old
oldest age	63 years old
Gender	
Man	11 patients (28.9%)
Woman	27 patients (71.1%)
Side Abscess	
Right	26 patients (68.4%)
Left	12 patients (31.6%)
Both of them	0
Length of complaint before MRS	36.26 ± 44.8 days
Average	3 days
Lowest value	180 days
The highest score	
Abscess Type	
Perirenal	15 (39.5%)
Pararenal	2 (5.3%)
Mixture	21 (55.2%)

Of 38 perirenal abscess patients, the mean age of the patients was 46.21 ± 11.74 years, consisting of 11 patients (28.9%) were men and 27 patients (71.1%) were women. The location of the most abscesses was in the right flank as many as 26 patients (68.4%), and 12 other patients (31.6%) occurred in the left flank. The average complaint felt by the patient was 36.26 ± 44.8 days before admission to the hospital. The types of abscess encountered were 15 patients (39.5%) in the form of a

perirenal abscess, 2 patients (5.3%) with pararenal abscess, and 21 patients (55.2%) with mixed abscess (peri-para-renal).

Overview of risk factors for perirenal abscess patients

Of 38 perirenal abscess patients studied, it was found that 15 patients (39.5%) had diabetes, 7 patients (18%) had hypertension, 17 patients (44.7%) also had kidney/ureteric stones, 7 patients (18%) suffered from malignancy, 10 patients (26.3%) had AKI/ACKD, and 3 patients (7.9%) had pulmonary tuberculosis. In this study, 16 patients (42.1%) had hydronephrosis on the side of the kidney affected by the abscess, 15 patients had a history of previous surgery, 10 patients (26.3%) had urological surgery, 2 patients (5.3%) had surgery. gynecology and 3 patients (7.9%) digestive surgery. Full details can be seen in Table 2 below.

Table 2 Risk factors for patients with perirenal abscess

Variable	Statistics
Diabetes mellitus	15 patients (39.5%)
Hypertension	7 patients (18%)
Kidney/ureteral stones	17 patients (44.7%)
Malignancy	7 patients (18.4%)
AKI/ACKD	10 patients (26.3%)
Pulmonary TB	3 patients (7.9%)
Hydronephrosis	16 patients (42.1%)
Previous surgery history	
urology	10 patients (26.3%)
gynecology	2 patients (5.3%)
digestive	3 patients (7.9%)
there is not any	23 patients (60.5%)

Overview of clinical signs & symptoms of a perirenal abscess

This study also investigated the clinical symptoms and clinical signs found in patients with perirenal abscesses. The symptoms and signs most frequently encountered in perirenal abscess patients were low back/abdominal pain in 38 patients (100%), lump/mass in the waist/lower abdomen in 36 patients (94.7%), and fever in 28 patients (73, 7%). Other symptoms and signs that were frequently encountered were CVA pain in 28 patients (73.7%), nausea/vomiting in 12 patients (31.6%), psoas sign in 12 patients (31.6%), and dysuria in 1 patient. (2.6%). From this study, it was also found that 25 patients (65.8%) had sepsis. Full details can be seen in Table 3 below.

Table 3 Clinical signs and symptoms of a perirenal abscess

Characteristics	Statistics
Back/stomach pain	38 patients (100%)
Fever	28 patients (73.7%)
Nauseous vomit	12 patients (31.6)
Dysuria	1 patient (2.6%)
Lump/mass in waist	36 patients (94.7%)
CVA pain	28 patients (73.7%)
Psoas sign	12 patients (31.6%)
Sepsis	25 patients (65.8%)

Description of perirenal abscess laboratory values

From laboratory data examined in perirenal abscess patients, it was found that 29 patients (76.3%) had anemia with average hemoglobin of 9.15 ± 1.99 g/dL, 28 patients (73.7%) had hypoalbumin with the average serum albumin was 2.75 ± 0.62 g/dL, 32 patients (84.2%) had leukocytosis with the lowest patient's leukocyte value was 6770 leukocytes/mm3, the highest was 39,500 leukocytes/mm3 with an average leukocyte count in this study was 17,860 ± 6901.2 leukocytes/mm3. On examination of kidney function, the average value of serum creatinine was 2.05 ± 2.11 mg/dL with the lowest value being 2.05 mg/dL and the highest value is 10.4 mg/dL. Full details can be seen in Table 4 below. On urine examination, the urine pH was 6.14 ± 0.85, with the highest number of leukocytes being 9 patients (23, 7%) a number of 0-5 leu/HPF and 10-20 leu/hp and. The highest number of urinary erythrocytes was 18 patients (47.4%) with a number of 0-5 erythrocytes/HPF.

Table 4 Laboratory values for perirenal abscess patients

Characteristics	Statistics
Hemoglobin (gm/dL)	9.15 ± 1.99 (3.7 – 13.2)
Anemia	29 patients (76.3%)
Leukocytes (leukocytes/mm3)	17,860 ± 6901 (6770 – 39550)
Leukocytosis	32 patients(84.2%)
Serum Creatinine (mg/dL)	2.05 ± 2.11(0.45 – 10.4)
Albumin	2.75 ± 0.62 (0.91 – 4.03)
Hypoalbumin	28 (73.7%)
Urinalysis	
urine pH	6.14 ± 0.85 (5.0 – 8.5)
Urine leukocytes (leukocytes/HPF)	9 patients (23.7%)
0-5	7 patients (18.4%)
5-10	9 patients (23.7%)
10-20	5 patients (13.2%)
20-50	8 patients (21.1%)
>50	
Urine erythrocytes (erythrocytes/HPF)	18 patients (47.4%)
0-5	9 patients (23.7%)
5-10	5 patients (13.2%)
10-20	2 patients (5.3%)
20-50	4 patients (10.5%)
>50	
Metabolic acidosis	9 patients (23.7%)

Overview of the management of perirenal abscess

In all patients with perirenal abscess, abscess drainage was performed, namely 35 patients (92.1%) underwent open drainage surgery, 3 patients (7.9%) underwent open drainage and nephrectomy. Neither patient underwent percutaneous drainage nor antibiotics alone. From the abscess drainage surgery, it was found that the average amount of pus was 581.5 ± 382.1 ccs with the distribution of 3 patients (7.9%) having pus <500 ccs, 13 patients (34.2%) having pus 100-500 cc. and 22 patients had pus >500 ccs. During the operation, it was also found that there were 7 cases (18.4%) whose abscesses had extended to the kidneys and 16 cases (42.1%) had extended to the psoas muscle which is usually called a psoas abscess. From the data, it was also found that 7 patients underwent surgery again in the form of 2 patients (5.3%) undergoing PNL, 1 patient (2.6%) undergoing URS, 1 patient (2, 6%) underwent open kidney stone surgery, and 3 patients (7.9%) underwent nephrectomy. For treatment, the average length of stay in the hospital was 21.53 ± 15.6 days with details of 4 patients (10.5%) being hospitalized for 7 days, 13 patients (34.2%) being hospitalized for 8 days. -14 days, 14 patients (36.8%) were hospitalized for 15-30 days, and 7 patients (18.4% were hospitalized for >30 days. The condition of the patients at the end of the treatment was 34 patients (89.5%)) was declared cured and received KRS, 2 patients (5.3%) requested Forced Return, and 2 patients (5.3%) died. Full details can be seen in Table 5 below.

Table 5 Management of perirenal abscess patients

Characteristics	Statistics
Initial Treatment:	
Only Antibiotics	0 (0%)
Open drainage abscess	35 patients (92.1%)
Open drainage abscess + nephrectomy	3 patients (7.9%)
percutan abscess drainage	0 (0%)
Pussy volume	
<100 cc	3 patients (7.9%)
100-500 cc	13 patients (34.2%)
>500 cc	22 patients (57.9%)
Average	581.5 ± 382.1 cc
Extends to the kidneys	7 patients (18.4%)
Extends to the psoas muscle	16 patients (42.1%)
Advanced Operation	
PNL	2 patients (5.3%)
URS	1 patient (2.6%)
Open surgery for kidney stones	1 patient (2.6%)
Nephrectomy	3 patients (7.9%)
There is no	31 patients (81.6%)
Average length of treatment	21.53 ± 15.6 days
Number of days of treatment:	
7 days	4 patients (10.5%)
8-14 days	13 patients (34.2%)
15-30 days	14 patients (36.8%)
>30 days	7 patients (18.4%)
Final state	
KRS (cured)	34 patients (89.5%)
PP	2 patients (5.3%)
Die	2 patients (5.3%)

Discussion

The perirenal abscess is a collection of purulent material in the perirenal cavity (between Gerota's fascia and renal capsule) which can occur due to the spread of the abscess from the renal parenchyma or due to hematogenous spread from infection outside the kidney.[1,2,3]

The perirenal abscess often occurs in patients with urinary tract obstruction, urinary tract stones, or diabetes mellitus. Patients with hydronephrosis, which is usually due to stone obstruction in the kidney, may develop abscesses in the perirenal cavity. Diabetes mellitus is found in approximately one-third of patients with perirenal abscesses. In one-third of cases, the perirenal abscess is caused by hematogenous spread, usually from the infected surrounding skin.[1,4,5]

Today, more than 75 percent of kidney or perirenal abscesses result from urinary tract infections. The infection spreads up from the bladder to the kidneys; pyelonephritis occurs before the abscess forms. Bacteria can directly invade the renal parenchyma from the medulla to the cortex. Local vascular channels in the kidney can facilitate the movement of these microorganisms. Areas of abscess can develop in the parenchyma and rupture penetrating into the perinephric cavity.[1,6]

When the perirenal infection is more widespread, it will rupture through Gerota's fascia into the pararenal space, this abscess becomes a pararenal abscess. The pararenal abscess can result in infection of the intestine, pancreas, or pleural space. In contrast, a pararenal abscess or psoas abscess may also result from bowel perforation, Crohn's disease, or spreading osteomyelitis of the thoracolumbar spine. The most common infections are infections caused by E. Coli, Proteus, and S. Aureus bacteria.[1,7]

The perirenal abscess is a rare disease. El-Nahas et al (2010) found 86 patients over a period of 8 years with an average age of 44.2 ± 17.3 years with the majority being male (58.1%). The side most affected by abscess was the left side (51.2%). In this study, 38 patients were found within 5 years with an average age of 46.21 years (age range 12 to 63 years) with the most being women (71.1%) and the most abscesses occurring on the right side (68.4%).[8]

The perirenal abscess may be confined to the perirenal space and may also extend to the pararenal space, affecting the psoas muscle or extending to the kidney. In some cases, an abscess may originate in the kidney that extends outward through the renal capsule. In research, it is difficult to find out exactly where the abscess came from, from the operation it can only identify the area where the abscess is and how far it has spread. In this study, most of the abscesses were in the peri-pararenal (mixed) area, which was about 55.2 percent with 42.1 percent extending to the psoas muscle.

There are several predisposing factors that are thought to trigger this perirenal abscess, including diabetes mellitus, kidney/ureter stones, hydronephrosis, malignancy, kidney failure (AKI/ACKD), tuberculosis, and a history of previous surgery. Kidney and ureteral stones can cause obstruction of the kidney which results in impaired urine flow which can lead to infection. Obstruction of the kidneys can also be caused by anatomical abnormalities such as neurogenic bladder, urethral stricture, vesicoureteral reflux, and polycystic kidney disease. Trauma can also result in an abscess as a result of a kidney biopsy or instrumentation of the urinary tract. Patients with diabetes are at increased risk of infection, including infections of the urinary tract. Diabetes can also cause changes in the body's defense system, including decreased neutrophil function, increased adherence of bacteria to uroepithelial cells in patients with diabetes, and decreased antibacterial activity as a result of glycosuria.[6,9,10,11]

El-Nahas et al (2010) found 33.7 percent suffered from diabetes, 24.4 percent suffered from kidney/ureter stones with 6.98 percent had a history of previous kidney surgery. Shen-Lin et al (2008) found that in 48 patients in their study, 62.5 percent had diabetes mellitus, 31.3 percent had kidney/ureter stones, 16.7 percent had hydronephrosis and 33.3 percent had a previous history of urological surgery. In this study, it was found that kidney/ureteric stones were the most predisposing factor, namely 44.7 percent, followed by hydronephrosis (42.1%), diabetes mellitus (39.5%, kidney failure (26.3%), malignancy (18, 16%). 4%), and pulmonary tuberculosis (7.9%). In this study, it was also found that several cases had a history of

previous surgery such as 26.3 percent had a history of urological surgery (kidney stones, both endoscopic and open surgery, TURB.[4,8]

The clinical signs of a perirenal abscess are non-specific. Therefore it is difficult to distinguish it from other diseases such as renal abscess, pyelonephritis, liver abscess, appendicitis, and others. Some of the clinical symptoms that can be experienced by patients with perirenal abscess are fever, abdominal/waist pain, lump/mass in the waist/abdomen, nausea/vomiting, weakness, weight loss, dysuria, and hematuria. El-Nahas et al (2010) found that 63.95 percent of their patients had a fever and low back pain, 19.77 percent had low back pain, and 11.6 percent had fever only. Liu XQ et al (2016) found that in cases of renal and pararenal abscess, the most common clinical symptoms were low back pain (76.5%), fever (53.1%), chills (28.6%), nausea/vomiting (25.5%), mass/lump in the flank area (12.2%), and CVA tenderness (87.8%). In this study, it was found that all cases (100%) experienced low back/abdominal pain. This may be because the average patient experienced symptoms 36.26 days before going to the hospital. Other clinical symptoms experienced by the patient were fever (73.7%), nausea/vomiting (31.6%), lump/mass in the waist (94.7%), and CVA tenderness (73.3%). This study also found 31.6 percent with a psoas sign (+), which is one sign of a psoas abscess. 65.8 percent of patients also had sepsis.2.8 In this study, 31.6 percent were also found with a psoas sign (+), which is a sign of a psoas abscess. 65.8 percent of patients also had sepsis.2.8 In this study, 31.6 percent were also found with a psoas sign (+), which is a sign of a psoas abscess. 65.8 percent of patients also had sepsis.[2,8]

In the laboratory, the examination found signs of infection such as leukocytosis or leukocyturia. On laboratory examination often found leukocytosis, elevated serum creatinine levels, and pyuria in more than 75% of cases. On examination urinalysis found leukocyturia, but this urinalysis examination can be normal in about 25 percent of cases. Urine culture shows only the abscess-causing microorganism in one-third of cases and blood culture in only half of cases. Some patients also sometimes found anemia and hypoalbumin.[1,12,13]

In this study, it was found that 84.2 percent had leukocytosis (mean leukocytes 17,860 leu/mm3, range 6770-39,550 leu/mm3), 76.3 percent had anemia (average Hb 9.15 gm/dl with a range of 3, 7-13.2 gm/dL), and 73.7 percent experienced hypoalbumin (average albumin 2.75 with a range of 0.91-4.03). For cases that are also accompanied by renal obstruction, there is often an increase in blood creatinine. Blood creatinine values obtained from this study ranged from 0.45 -10.4 mg/dL with an average of 2.05 g/dL. On blood gas analysis, 23.7 percent were found to have metabolic acidosis. These results are not much different from other studies, such as the El Nahas et al (2010) study, which found an average Hb of 10.4 gm/dL (range 5.2-16.2 gm/dL), and an average creatinine of 1, 97 mg/dL (range 0.3-9.9 mg/dL).[8]

The principle of management of perirenal abscess is to treat the infection. The treatment of perirenal abscess can be in the form of antibiotics and abscess drainage. The use of antibiotics without drainage can usually be effective in treating renal or perirenal abscesses smaller than 5 cm. Usually, the administration of antibiotics is also followed by drainage surgery either percutaneous or open drainage. Percutaneous drainage is the primary method of perirenal abscess, this action can reduce the need for open drainage so as to reduce the morbidity rate. However, the disadvantage of this method is that it is difficult to drain cases with multilocular abscesses. For cases of multilocular abscess, open drainage has a higher cure rate. In this study, there were no patients who were treated with antibiotics alone. The drainage used also only uses open drainage. This is because all cases of perirenal abscess that exist are cases that are not simple and have been going on for a long time.[8,9,14]

Nephrectomy may be considered if the kidney is non-functional or if the infection is severe. In this study, it was found that 92.1 percent of patients only underwent open drainage, while the remaining 7.9 percent

underwent open drainage and nephrectomy. Of the 35 patients who only underwent open drainage, there were 3 patients who also underwent nephrectomy, 4 patients who underwent follow-up surgery to remove kidney stones or ureters. A nephrectomy was performed because the operation found an abscess that also affected most of the kidneys and it was suspected that the kidney function was already poor. Surgery for kidney stones/ureter is performed after open drainage surgery so that the abscess does not extend to the kidney.

The cure rate and length of treatment for patients with perirenal abscesses are very diverse, in addition to depending on the patient's condition, it is also influenced by how effective the therapeutic measures chosen for abscess drainage are. El Nahas et al (2010) found a cure rate of 69 percent for percutaneous drainage and 98 percent for patients undergoing open drainage. The average length of treatment was found to be 6 days for percutaneous drainage and 3.6 days for open drainage. In this study, the recovery rate was 89.5 percent with 5.3 percent experiencing forced discharge and 5.3 percent experiencing death. The average length of treatment was 21.53 days, with 36.8 percent undergoing treatment between 15-30 days.[8,15]

The high length of treatment for cases of perirenal abscess is thought to be due to the patient's condition which had worsened when he came to the hospital due to delays in establishing the diagnosis of a perirenal abscess.

There are several limitations in this study, including the absence of radiological examination data for this case of the perirenal abscess. Another limitation is the lack of variety of procedures for drainage of perirenal abscesses because all of these cases were performed with open drainage methods.

Conclusion

The perirenal abscess has non-specific clinical signs and symptoms, so it is sometimes difficult to make a diagnosis. The average duration of patient complaints was 36.26 ± 44.8 days before admission to the hospital, with the most complaints being low back/abdominal pain (100%). Other clinical signs and symptoms are lump/mass in the waist, fever, CVA tap pain, nausea and vomiting, psoas sign, and dysuria. A total of 65.8% of patients also had sepsis when they came to the hospital. On laboratory examination can also be found anemia, leukocytosis, hypoalbumin, increased serum creatinine, leukocyturia, and microscopic hematuria. Patients with low back/abdominal pain accompanied by a lump in the waist and fever that has lasted more than 5 days may suggest a perirenal abscess and need further diagnostics.

The most common risk factor for a perirenal abscess is kidney/ureteral stones. Other risk factors are hydronephrosis, diabetes mellitus, kidney failure, malignancy, hypertension, tuberculosis, and some patients have a history of previous surgery, namely urological surgery, gynecological surgery, and digestive surgery. These risk factors can worsen the disease condition of patients with perirenal abscesses

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Abscess drainage is the best option for the treatment of perirenal abscesses. Open drainage is a technique that is often used in RSUD dr. Soetomo, and showed good results in the management of perirenal abscess patients.

Further research is needed, and a better study design to provide a clearer picture of this perirenal abscess.

References

1. Wein, Alan et al. Campbell-Walsh Urology Tenth Edition. Philadelphia: Elsevier-Saunders; 2012.

2. Qin Liu X, Wang C, Bin Liu Y, et al. Renal and perirenal abscesses in West China Hospital: 10-year retrospective-descriptive study. World J Nephrol. 2016 5(1):108-114.

3. Gardiner RA, Gwynne RA, Robert SA. Perinephric abscess. BJU Int 2011; 107 Suppl 3: 20-23.

4. Shen Lin H, Ye J, Huang TY, et al. Characteristics and factors influencing treatment outcome of renal and perinephric abscess – a 5-year experience at a tertiary teaching hospital in Taiwan. J Microbiol Immunol Infect. 2008; 41: 342-350.

5. Hashim, Hashim et al. Urological Emergencies in Clinical Practice. London: Springer-Verlag; 2005.

6. Kasper DL, Fauci AS. Harrison's infectious diseases. McGraw-Hill;2010.

7. Tanago, Emile. McAninch, jack. Smith's general urology 6th ed. United States:McGraw Hill; 2003.

8. El Nahas AR, Faisal R, Mohsen T, Al-Marhoon MS, Abol-Enein H. What is the best drainage method for perinephric abscess? Int Braz J Urol 2010; 36:29-37.

9. Ko MC, Chiu AL, Liu CC et al. Effect of diabetes on mortality and length og hospital stay in patients with renal or perinephric abscess. clinics. 2915; 68(8):1109-1114.

10. Dembry LM, Andriole VT. Renal and perirenal abscesses. Infect Dis Clin North Am 1997; 11:663-680.

11. Casqueiro J, Casqueiro J, Alves C. Infections in patients with diabetes mellitus: A review of pathogenesis. Indian J Endocrinol Metab. 2012;16 (suppl.1): S27-36.

12. Thorley JD, Jones SR, and Sanford JP, Perinephric abscess. Medicine (Baltimore), 1974. 53(6): 441–51.

13. Edelstein H and McCabe RE, Perinephric abscess. Modern diagnosis and treatment in 47 cases. Medicine (Baltimore), 1988. 67(2): 118–31.

14. Kawashima A and LeRoy AJ, Radiologic evaluation of patients with renal infections. Infect Dis Clin North Am, 2003. 17(2): 433–56.

15. Meng MV, Mario LA, McAninch JW. Current treatment and outcomes of perinephric abscesses.J. Urol 2002; 168:1337-1340