International Journal Dental and Medical Sciences Research (IJDMSR)
ISSN: 2393-073X Volume 4, Issue 9 (September - 2020), PP 35-37
www.ijdmsr.com

Emergency Management of Unexpected Septic Shock In a Patient Undergoing Cystoscopy & Urethral Dilatation.

Abinash Patra, Subhashree Das
Hi-Tech Medical College & Hospital, Bhubaneswar
**Corresponding Author: Abinash Patra*

ABSTRACT:
We present a case of life-threatening septic shock undergoing Cystoscopy and dilatation of urethral stricture in the operation the after just after the surgery. Patient was symptomatically diagnosed on the operation table and intensively managed to stabilize quickly without wasting time and later it was confirmed by investigations that it was a septic shock resulted due to Gram negative bacilli *E-coli*.

Keywords: Septic shock; Cystoscopy and dilatation of urethral stricture; Gram negative bacilli.

I. INTRODUCTION:

In spite of higher levels of advancement in surgeries related to the urinary tract there are few unexpected complications which are quite difficult to predict or prevent. Despite careful preoperative preparation of patients, there is persistent risk of urosepsis in these patients.

This case was encountered during surgery in our hospital and it's a very rare case, of which very few are reported worldwide and probably the first case of its kind reported from India.

II. CASE REPORT:

A 47 years old man with poor stream urination got admitted in our hospital. He was an old case of Benign Hypertrophy of prostate operated two years back.

He had no prior history of Type II Diabetes, hypertension or any other chronic disease.
Results of all physical examinations were completely normal.

The patient was planned for Cystoscopy and urethral dilatation and all necessary investigations were done according to protocol which is shown in Table 1.

Laboratory investigations Parameters
Random Blood Glucose 126mg/dl
Serum Urea 26 mg/dl
Serum Creatinine 1.20 mg/dl
Serum Sodium 140 meq/l
Serum Potassium 3.5 meq/l
Total WBC count 6370 cells/cumm
Haemoglobin 12.9 g/dl
Platelet Count 2.37 lakh/cumm

Table 1: Laboratory investigation reports.

Urine analysis showed specific gravity 1.016, PH of 6.2, white blood cell count was 6 to 7 cells/hpf, red blood cell count was 10 to 15 cells/hpf and the culture of morning midstream urine showed presence of Gram negative bacilli E-coli .On CT IVU left kidney showed mild hydronephrosis. Prior to surgery the patient was started with intramuscular antibiotic amikacin sulphate single dose and oral ciprofloxacin 500 mg tablets for five days. After keeping the patient nil per oral for 6 h

Cystoscopy and dilatation was performed under spinal anaesthesia with 0.5% Bupivacaine (heavy) and the time taken for surgical procedure was 40 mins during which period his vitals remained completely normal.

Just 15 min later in the recovery room the patient suddenly had restlessness with shivering. On physical examination he had tachycardia (120 beats/ min) and hypotension (90/60 mmhg). Respiratory rate was more than 30/min. The patient was immediately shifted to OT.

Despite of treatment with ephedrine 6 mg boluses intermittently, hypotension deteriorated gradually and septic shock was suspected. Immediately another intravenous access was obtained with an 18G cannula and aggressive fluid management with crystalloids was started. Arterial blood was obtained from right hand radial artery and the report is shown in Table 2.

Laboratory investigations Parameter
PH 7.23
PCO2 38 mmHg
PO2 88 mmHg
HCO3- 1 mEq/L
Base Excess -10 mmol/L
Blood Lactate 4.3 mmol/L

Table 2: ABG report.

In spite of loading with normal saline and ringer lactate through both the cannula his blood pressure dropped down to 62/48 mmhg and immediately Noradrenaline drip was started at 0.1 µgm/kg/min with a micro drip infusion set. A dose of Imipenem 500 mg combined with Cilastatin 500 mg was administered empirically.

Gradually blood pressure was maintained at 110/65 mmhg and pulse rate at 94 beats/min. Oxygen saturation was maintained above 96% and subsequently the patient was shifted to intensive care unit for observation and further management.

In the intensive care unit the patient was managed conservatively for two days without any use of vasopressors or mechanical ventilation. The lactate level came down to 1 mmol/L on the very next day of his admission to intensive care unit.

On laboratory investigation his total WBC count was elevated to 22,400 cells/µl with differential count showing 96% of neutrophils. His C-reactive protein level was 326 mg/l. On culture blood as well as urine showed E-coli infection. Hence it was confirmed to be a case of septic shock.

III. DISCUSSION:

Sepsis is a systemic deleterious host response to infection that is associated with high rates of unfavourable outcomes. It can result from bacteria, viruses, fungi, or parasites, or it can develop in non-infectious intraabdominal incidents such as severe trauma, pneumonia, pancreatitis, and other incidents such as urinary system infection.

Mortality rates for severe sepsis and septic shock have been reported to be as high as 28-41% [1,2]. In a significant proportion of these cases, the source of infection is the urinary tract (severe sepsis: 9%; septic shock: 31%) [3].

To Be Completed Within 3 h of Time of Presentation*
1 Measure lactate level
2 Obtain blood cultures prior to administration of antibiotics
3 Administer broad spectrum antibiotics
4 Administer 30 ml/kg crystalloid for hypotension or lactate ≥ 4 mmol/L

*"Time of presentation" is defined as the time of triage in the emergency department or, if presenting from another care venue, from the earliest chart annotation consistent with all elements of severe sepsis or septic shock ascertained through chart review.

To Be Completed Within 6 h of Time of Presentation

5 Apply vasopressors (for hypotension that does not respond to initial
fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥ 65
mmHg
6 In the event of persistent hypotension after initial fluid administration
(MAP<65 mmHg) or if initial lactate was ≥ 4 mmol/L, re-assess
Volume status and tissue perfusion and document findings according to Table 1.
7 Re-measure lactate if initial lactate elevated.

Table 3: Surviving Sepsis Campaign. Updated Bundles in Response to New Evidence.

When a midstream urine sample shows evidence of infection, the operation should be postponed until a sterile urine sample is achieved.

Despite this, the patient is still potentially at risk of a life-threatening systemic infection [4]. Kamei et al. [5] revealed that thrombocytopenia and a positive blood culture were independent risk factors for septic shock in cases of acute obstructive pyelonephritis requiring emergency drainage. The inability to definitively determine the site of infection and to obtain positive blood cultures, however, should not preclude treating patients with severe sepsis (Table 3). In 20-30% of septic patients, a definite site of infection is not determined [6,7]. Similarly, blood cultures are positive in only approximately 30-35% [6-8]. Sepsis has a complicated pathology, and it is not yet fully understood because it has a variety of clinical and physiopathological symptoms [9].

In this case the patient was treated with adequate fluid management, broad spectrum antibiotics, vasopressors and MAP>65 were maintained. There was no evidence of severe hydronephrosis and the time taken for the surgery was also short, still a life threatening septic shock emerged unexpectedly in the operation theatre.

REFERENCES:

[1]. Martin GS, Mannino DM, Eaton S, Moss M (2003) The epidemiology of sepsis in the United States from 1979 through 2000. N Engl J Med 348: 1546-1554.

[2]. Rangel Frausto MS, Pittet D, Costigan M, Hwang T, Davis CS, et al. (1995) The natural history of the systemic inflammatory response syndrome (SIRS)-A prospective study. JAMA 273: 117-123.

[3]. Levy MM, Artigas A, Phillips GS, Rhodes A, Beale R, et al. (2012) Outcomes of the surviving sepsis campaign in intensive care units in the USA and Europe: a prospective cohort study. Lancet Infect Dis

[4]. 12: 919-924.

[5]. Mariappan P, Smith G, Bariol SV, Moussa SA, Tolley DA (2005) Stone and pelvic urine culture and sensitivity are better than bladder urine as predictors of urosepsis following percutaneous nephrolithotomy: a

[6]. prospective clinical study. J Urol 173: 1610-1614.

[7]. Kamei J, Nishimatsu H, Nakagawa T, Suzuki M, Fujimura T, et al. (2014) Risk factors for septic shock in acute obstructive pyelonephritis requiring emergency drainage of the upper urinary tract. Int Urol Nephrol 46:

[8]. 493-497.

[9]. Bone RC, Grodzin CJ, Balk RA (1997) Sepsis: a new hypothesis for pathogenesis of the disease process. Chest 112: 235-243.

[10]. Esmon CT (2000) Regulation of blood coagulation. Biochim Biophys Acta 1477: 349-360.

[11]. Grinell BW, Joyce D (2001) Recombinant human activated protein C: a system modulator of vascular function for treatment of severe sepsis. Crit Care Med 29: S53-S61.

[12]. Rittirsch D, Flierl MA, Ward PA (2008) Harmful molecular mechanisms in sepsis. Nat Rev Immunol 8: 776-787.

Corresponding Author: Abinash Patra
Hi-Tech Medical College & Hospital, Bhubaneswar