



Septic Abortion Accompanied with Dessiminated Intravascular Coagulation and Acute Cardiomyopathy Presentation of a Rare Case and Mini Review

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ABSTRACT

Introduction: Septic abortion represents a common entity of maternal death, demonstrating a variety of clinical conditions. In the obstetric field, chorioamnionitis, a membrane rupture due to vaginal or urinary tract infection can lead to septic abortion, and in extreme conditions to dessiminated intravascular coagulation, a life threatened condition for the mother and the fetus.

Chorioamnionitis, is strongly associated with increased preterm labor rate and child development disorders.

Objective: Presentation of a rare case of septic abortion well-diagnosed and proper treated.

Methodology: Assiduous depiction of case presentation and current literature.

Result: Proper treatment and counseling regarding the clinical management of such cases.

Conclusion: Presentation of a 35-year-old female patient, in the 17th week of gestation after second IVF attempt. After research laparotomy due to diffuse abdominal pain and automatically membrane rupture, the patient underwent therapeutic uterus evacuation. Through all these procedures the mechanism of dessiminated intravascular coagulation was activated, leading to vaginal bleeding and haemorrhagic shock. The patient admitted to the intensive care unit, properly treated with antimicrobial agents and colloid fluids, necessary clinical tools concerning the treatment of septic conditions.

Keywords: Chorioamnionitis; Septic Abortion; Disseminated Intravascular Coagulation

INTRODUCTION

Pregnancy represents the time period, in which one or more offspring develop inside a uterus [1]. Symptoms of early pregnancy may include missed periods, tender breasts, nausea and vomiting, hunger, and frequent urination.

According to current bibliography, there is a decrease of annual complications during pregnancy, estimated at 293,000 deaths in 2013, in comparison with 377,000 deaths in 1990. The most common causes consist of vaginal bleeding, blood hypertension during gestation, abortion accompanied with vaginal or urine tract infections, leading to maternal sepsis and obstructed labor [2].

Septic abortion reflects a life threatening maternal condition with a constant increased rate of 0.4 to 0.6 per 100.000 spontaneous abortions [3].

The pathogenetic mechanism of septic abortion occurs through infected vaginal or urine channel and spreads in the whole peritoneal cavity causing septicemia [4].

Septicemia, a spread infection through blood vessels, reflects a life threatening condition with ultimate establishment the activation of septic shock and disseminated intravascular coagulation.

Many bacterial agents are responsible for the completion of this pathogenetic procedure. Key representatives are mainly gram-negative organisms, such as *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus* species and most of all chlamydial infections [5].

4. Objective

OBJECTIVE

The objective of the following case presentation reflects the proper diagnosis and treatment of a maternal life threatening condition such as septic abortion. Factors such rapidly disease spread, hemodynamic instability and ventilation of the patient, always affect the final clinical mapping.

CASE

We present a rare case of a 35-year-old female patient admitted to our Department in the 17th week of gestation after second IVF attempt. The patient, with no family history, complained of diffuse abdominal pain. The physical examination revealed intense abdominal sensitivity and muscular contraction. During the last three days, she reported abdominal swelling and interruption of gases and feces. (positive Murphy, rebound and Jiordano sign)

The laboratory examination consisted of increased range of white blood cells and inflammatory markers. The gynecological examination did not reveal signs of pathology. (T:37,7 C, WBC 17.800, CRP 38, 5 U/L, Blood pressure 110/60 mmHg, SaO2 98%)

According to the U/S report, there was plenty amount of amniotic fluid without any sign of membrane rupture and positive fetal heart pulse. Due to previous clinical and imaging examination, the patient admitted to the surgical Department. Assiduous clinical examination revealed intention of abdominal pain at the

examination revealed intention of abdominal pain at the left iliac fossa and left renal region. The patient was subjected to potent antimicrobial treatment.

After a short period of time, there was a decrease of all hemodynamic parameters of the patient. (WBC 19,800, Hct 28.9%, Hb 9.5 g/dl, CRP 65, 84mg/L). Next to the automatically membrane rupture, there was increased abdominal pain and muscular contractions, signs of preterm labor (positive fetal heart pulse).

Due to increased and located abdominal pain the patient underwent exploratory laparotomy not revealing any signs of surgical pathology. Meanwhile, the cervical dilatation was increased, measuring 3-4 cm.

With the administration of uterus contractile solutions, such as Oxytocin solutions, the patient underwent therapeutic evacuation of the uterus. (negative fetal heart pulse.) This procedure consisted of fetal and placental evacuation accompanied with diagnostic curettage. Amniotic fluid, part of the placenta, membrane and vaginal fluid were sent for diagnostic cultivation, part of the placenta membrane and part of the umbilicus were sent for histopathologic evaluation.

The cultivation results revealed Klebsiella infection. The histopathologic examination revealed placenta of 17th week of gestation, high level maternal necrotic chorioamnionitis, increased fetal inflammatory response, peripheral hematoma and peripheral placenta abruption.

Final result was the establishment of transcervical Klebsiella infection. At the end of these procedures, the patient admitted to the Surgical Department.

Due to an intense vaginal bleeding, there was an affection of the hemodynamic status of the patient. Final step, admission to the surgery room with signs of atonic uterus and haemorrhagic shock. She underwent diagnostic curettage with presence of diffuse vaginal bleeding. (systematic arterial blood pressure 50 mm Hg and Hct 18%). In order to avoid vaginal bleeding, vaginal and cervical tamponade was mandatory.

Next step, the activation of disseminated intravascular coagulation. The patient was supported with 5 units of packed red blood cells, 5 units of platelets and 3 units of frozen plasma, coagulation factors, crystalloid and colloid solutions. She revealed renal disturbances with signs of oliguria as complication of the haemorrhagic shock. She was supported with enormous doses of furosemide. Due to episodes of lung constriction entered the fact of pulmonary embolism. For the evaluation of septic areas, the patient after the surgery underwent CT thorax-upper and lower abdomen.

The CT examination revealed pulmonary areas of atelectasis and areas of pleural fluid collection. In the abdominal cavity there was fluid collections around the liver and behind the peritoneal cavity. All the abdominal organs showed no signs of malignancy. The patient was admitted to the Intensive Care Unit (Figures I,II).

Despite the difficulties of ventilation, the patient was supported with crystalloid and colloid fluids and low doses of vasoconstricted solutions. Due to endometrial, there were increased doses of anti-microbial agents, such as Meropenem, Flagyl and Voncon. The inflammatory markers were increased, with disturbances of coagulation such as thrombocytopenia and decreased ranges of fibrinogen. The U/S evaluation revealed enormous decrease of the myocardial function with ejection rate 30%. (sign of cardiac insufficiency). The following day, there were episodes of fever, increase of the inflammatory markers with stabilization of the hemodynamic support, without signs of increased vaginal bleeding or abdominal pathology. Managing the fact of the intrabdominal sepsis, the patient was supported with doses of Meropenem, Briklin, Tygacil, Azithromycin and Fluconazole.

The new abdominal CT did not show any signs of pathology.

After a period, there was a stabilization of the hemodynamic status, increased of the renal function and decrease of all inflammatory markers (Table II).

The patient had normal neurological status, autonomic ventilation and renal function. She started per us feeding. She was discharged to the gynecologic Department.

Due to Rhesus negative, the patient underwent anti-D- immune globulin injection and pharmaceutical milk interruption. After a few days, she was discharged from the hospital in good clinical condition.

DISCUSSION

Septic shock represents a life threatening clinical syndrome as result of severe infection and sepsis. The insertion of viruses and bacteria into the blood circulation lead to the so-called viremia or bacteremia.

As result of all these procedures, the human organism creates the sepsis syndrome.

According to current bibliography, the global incidence estimates between 25 and 50% [6].

Acute chorioamnionitis is usually caused by ascending infection that can precipitate premature rupture of membranes and delivery. The bacteria most commonly isolated from cases of chorioamnionitis are *Escherichia coli*, coagulase positive *Staphylococcus*, *Haemophilus vaginalis*, *Streptococci*, *Listeria monocytogenes* and other Gram-negative bacilli [7].

Besides the clinical figures and complications of acute chorioamnionitis there are always clinical and amniotic fluid laboratory signs, which certify the acute lesion (Table I).

As we mentioned above, many bacteria have been reported as culprit organisms, regarding the aetiology of placental infection. Passing through the current bibliography there are few cases in the literature of acute placental infection caused by *Klebsiella pneumoniae*. The emphasis of this reason, is to underline the proper diagnosis and treatment of this clinical procedure. *Klebsiella* species are an important element of the normal flora of gastrointestinal tract. The clinical range varies, including pneumonia, urinary tract infections, bacteraemia and a chronic granulomatous disease of the upper airways [8].

When the clinical status of the lesion is worsening, there is a possibility of the activation of the Disseminated Intravascular Coagulation (DIC) mechanism. This chronic point is very crucial for the clinical status of the patient. It represents a spontaneous intravascular activation of coagulation. The main pathophysiological mechanisms of DIC are inflammatory cytokine-initiated activation of tissue factor-dependent coagulation, insufficient control of anti-coagulant pathways and plasminogen activator inhibitor 1-mediated suppression of fibrinolysis [9]. Together, these changes give rise to endothelial dysfunction and microvascular thrombosis, which can cause organ dysfunction and seriously affect patient prognosis.

In our case, there was an immediate activation of the DIC mechanism. As result of this procedure, all coagulation factors were consumed with ultimate goal the enormous vaginal bleeding of the patient.

The answer to this clinical status is strongly associated with immediate and proper diagnosis and treatment.

CONCLUSION

Septic abortion represents a rare entity with severe intra- and postoperative complications. Our case consisted of a life threatening procedure, well diagnosed and properly treated. Ultimate goal remains the disciplinary cooperation between gynecologists, general surgeons and anesthesiologists with scope the patient quality of life.

Table I: Clinical and amniotic fluid laboratory diagnosis of chorioamnionitis Tita *ATN* et al, Clin Perinatol. 2010

Test	Result Suggesting Chorioamnionitis	Comments
Clinical Parameters		Generally non-specific [4]
Fever	Temperature >100.4 twice or >101 once	95-100 sensitive [4]
Maternal tachycardia	> 100/ min	50-80% sensitive
Fetal tachycardia	>160/min	40-70% sensitive
Fundal tenderness	Tenderness on palpation	4-25% sensitive
Vaginal discharge	Foul-smelling discharge	5-22% sensitive
Amniotic fluid parameters		
Culture	Microbial growth	Diagnostic gold-standard
Grain stain	Bacteria or white blood cells (>6/HPF)	24% sensitive, 99% specific [31]
Glucose level	<15mg/dl	Affected by maternal hyperglycaemia 57% sensitive, 74% specific [31]
Interleukin 6	>7.9ng/ml	81% sensitive, 75% specific [31]
Matrix Metalloproteinase	Positive result	90% sensitive, 80% specific [30]
White blood cell count	>30/cubic mm	57% sensitive, 78% specific [31]
Leukocyte esterase	Positive (dipsitcks)	85-91% sensitive, 95-100% specific [26,32]

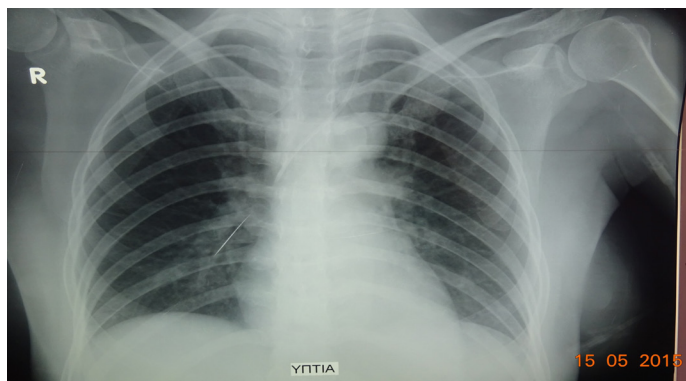


Figure I: Thorax-X-Ray (1st Day in the ICU)

Table II: Chronical Diagramm (Intensive Care Unit)

DAYS	5 th	6 th	7 th	8 th	9 th
T: C	37,7	37,1	37,5	37,3	37,1
WBC	32.100	39.500 36.500	33.000	27.800	25.600
CRP		138	67		42
PCT		2		0,6	
Plt	80.000	170.000	189.000	289.000	517.000
INR	1,17	1,14	1,2		
aPTT	31,5 sec	29,4 sec	228,7 sec		
Hb(g/dl)	11,5	11,9	10,2	10,7	
PaO2/FiO2	400	360	280	300	
T-BIL	1,8	1,3	1,4	1,3	1,2
NO	13	11	4	2	1
REPINEPHRIN					
TROPONIN-1	1,75	1,28	0,69	1,1	

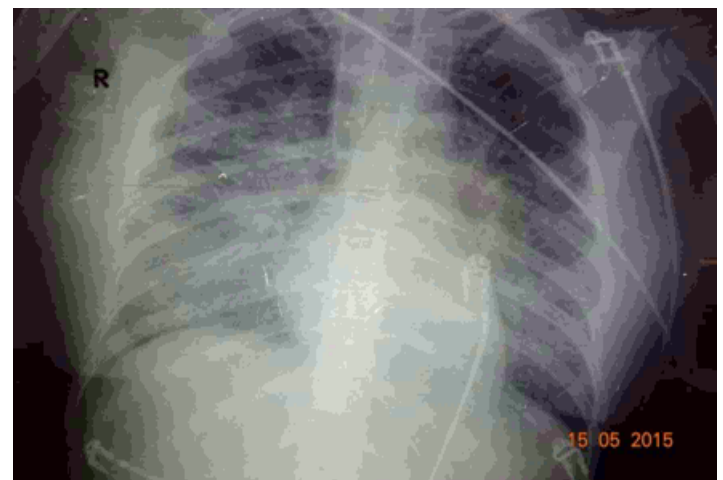


Figure II: Thorax-X-Ray (1st Day in the ICU)

REFERENCES

1. "Pregnancy: Condition Information". December 19, 2013. Retrieved 14 March 2015. <http://www.nichd.nih.gov/>
2. "Global, regional and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013". *Lancet*. 385: 117–171.
3. Stubblefield PG, Grimes DA. Septic abortion. *N Engl J Med*. 1994; 331: 310-14. <https://goo.gl/3Rj4wU>
4. Adewole IF. Trends in obstetrical mortality and morbidity in Ibadan. *Int J Gynaecol Obstet*. 1992; 38: 115-118. <https://goo.gl/f7kuBP>
5. Sharma S. Shock and pregnancy. *Emedicine*. 2003. <https://goo.gl/PZpUr8>
6. Kumar Vinay, Abbas Abul K, Fausto Nelson, Mitchell Richard N Robbins. *Robbins Basic Pathology 8th Saunders Elsevier*. 2007; 102-103. <https://goo.gl/3pvAvc>
7. Benirschke K, Kaufmann P. Infectious diseases. In: *Pathology of the human placenta*. 4th ed. New York: Springer-Verlag. 2000. 591-659. <https://goo.gl/2ycBgy>
8. Schwartz DA, Geyer SJ. Klebsiella and rhinoscleroma. In: Conner DH, Chandler F, Schwartz D, Manz H, Lack E, editors *Pathology of infectious diseases*. Stamford Connecticut. Appleton and Lange. 1997; 589-595.
9. Taylor FB Jr, Toh CH, Hoots WK, Wada H, Levi M. Towards definition, clinical and laboratory criteria, and a scoring system for disseminated intravascular coagulation. *Thromb Haemost*. 2001; 86: 1327–1330. <https://goo.gl/25q4Yg>