

Characteristics Of The Course Of Postpartum Endometritis In The Presence Of Various Etiological Factors

Mariam Kharashvili, Platon Machavariani, Nino Chinchradze

MD. PHD Doctorant TSMU. LTD. Clinic of David gagua. Tbilisi, Georgia.

MD. PHD. Department of Gynecology and Obstetrics. Tbilisi, Georgia.

MD. Vakhtang Bochorishvili Sepsis National Center. Ltd. Clinic of David Gagua, Tbilisi, Georgia

Marieti111@live.com, Mari.kh.marieti@gmail.com, Ninomachavariani@yahoo.com

Abstract: Objective: The goal of our survey is early detection of symptoms of infectious processes related to the etiology of maternal childbirth and postpartum periods to prevent maternal morbidity and mortality. Background: We present three patients with severe clinical cases; puerperal acute endometritis was caused by different etiologic factors. Design: Retrospective cohort study. Methods: Women hospitalized for postpartum acute Endometritis during 01.01.2010 -01. 01.2012. Clinical investigation revealed early, delayed, and late clinical pathogenic stages of acute endometritis in the postpartum period. Conclusion: postpartum endometritis, caused by various etiological factors are characterized with different clinical symptoms, and in most cases primary symptoms are minimal, which is the cause of inadequate antimicrobial therapies and is the cause of inadequate assessment of the infection focus

Keywords: Postpartum endometritis, maternal sepsis, acute infection.

Instruction:

Postpartum Endometritis is the second common reason of maternal morbidity and mortality caused by bleeding. In recent years the World Health Organization has published data on maternal morbidity and mortality for the last 10 years, where the most prevalent reason was late identification of the illnesses and cases caused by acute illnesses (16.8%). [1.2]. According to the data (research in Georgia, 2014) published by the Gynecology Department of the National Sepsis Center of Georgia (2005-2010,) maternal mortality share was 4,5-15% of the total septic complications, and Lethal maternal sepsis share was over 20-40%. [3] Nowadays, rational use of preventive antibiotic therapy has reduced the number of cases. However, the infection still occurs in 10% - 20% of patients and still remains the challenge for modern medicine. [4.5] Late diagnosis of the disease causes extended period of treatment [11], and after the failure of the conservative treatment the focus of the infection, the uterine becomes vulnerable to be removed surgically and thus women in their reproductive age become sterile. Characteristics of the course of postpartum endometritis in the presence of etiological factors, creates a kind of timely identification dilemma, although it appears to be an attractive sphere for researchers. In the given article three cases of postpartum endometritis are described and analyzed. They are: late, delayed, and timely clinicopathological cases. According to the analysis of the above described cases, making timely diagnosis of postpartum endometritis has some concealed difficulties. In particular cases to make right analysis, appropriate laboratory and instrumental findings, and thorough assessment of a clinical picture in relation with primary focus conditions are necessary.

Instruction:

Postpartum Endometritis is the second common reason of maternal morbidity and mortality caused by bleeding. In recent years the World Health Organization has published data on maternal morbidity and mortality for the last 10

years, where the most prevalent reason was late identification of the illnesses and cases caused by acute illnesses (16.8%). [1.2] According to the data (research in Georgia, 2014) published by the Gynecology Department of the National Sepsis Center of Georgia (2005-2010, 534 patients) maternal mortality share was 4,5-15% of the total septic complications, and Lethal maternal sepsis share was over 20-40%. [3] Nowadays, rational use of preventive antibiotic therapy has reduced the number of cases. However, the infection still occurs in 10% - 20% of patients and still remains the challenge for modern medicine. [4.5] Late diagnosis of the disease causes extended period of treatment [11], and after the failure of the conservative treatment the focus of the infection, the uterine becomes vulnerable to be removed surgically and thus women in their reproductive age become sterile.

Objective:

The goal of our survey is early detection of symptoms of infectious processes related to the etiology of maternal childbirth and postpartum periods to prevent maternal morbidity and mortality.

Materials and methods.

Prospective cohort study. A 2012-2013 clinical investigation revealed early, delayed, and late clinical pathogenic stages of acute endometritis in the postpartum period. We present three patients with severe clinical cases, when postpartum acute Endometritis was caused by different etiologic factors.

Results and their discussion.

Case report 1. A female patient, 30 years old, on admittance, on the 6th day of postpartum had high temperature (T-39°C), general weakness, shortness of breath, pain in the epigastrium, dizziness, dry mouth, abdominal distension, infiltration in the area of operation suture. In the anamnesis she had a history of three pregnancies, three cesarean operations. She had anemia

and a bacterial vaginitis in the 3rd trimester of the pregnancy. On the 39-th week of pregnancy the patient was operated on, a scheduled Cesarean section was carried out. According to the records, in accordance with the Protocol, she was administered prophylactic antibiotic therapy during the course of the operation. According to the records, on the 4th day, after the routine clinical laboratory tests she was discharged from the hospital in a satisfactory condition. The patient was readmitted to hospital on the 6th day with the above mentioned symptoms. According to the objective data, hemodynamic disturbances were observed: hypotonia, sinus tachycardia (V2-V3), breathing parameter disorders (R-26-28) deepening in dynamic. Liver stuck out from the rib cage for to 2 cm. Postoperative suture was infiltrated, and open. The uterus was the size of a 12 week pregnancy uterus, soft, and tender. Laboratory findings revealed: leucopenia, neutrophilia, anemia, CRP-200mg/l, moderate form of creatininemia, hyper coagulation. Bacteriological investigation method detected *Pseudomonas aeruginosa*, and *Bacteroides fragilis* in the blood. Identification of Diagnosis: severe sepsis, postpartum purulent necrotic endometritis, septicemia, septic shock, polyorganic insufficiency, postoperative suture infiltration. After the identification of the diagnosis a broad spectrum of antibiotic therapy was initiated, but without any results. On the 7th day, under the conditions of septic shock, she was operated on, carried out relaparotomy, hysterectomy, necrectomy. Anti-shock treatment was carried out in the course of the operation. While dissecting gas was released from the soft tissue. Notwithstanding all the above mentioned the patient died on the operating table. Pathomorphological findings of the postoperative samples showed: postcesarean acute croupous necrotic endomyo-metritis, caesarean section and purulent-necrotic regions of destructive croupous ulcerative endomyo-perimetritis, thrombophlebitis.

Case report 2. A female patient, 26 years old, complications developed at home, on the 5th day of postpartum. She had high fever (T-37.2°C), general weakness, epigastric pain, and was readmitted to maternity home. The patient had a history of 2 pregnancies, and 2 childbirths. In the 2nd trimester of pregnancy she overcame a viral flu H1N1 with complicated viral pneumonia. In the 40th week of pregnancy she gave birth without any complications, on the 3rd day of postpartum after the routine clinical laboratory examination she was discharged from the maternity home in a satisfactory condition. According to the objective assessment the hemodynamic parameters were within normal limits. Uterus with enlarged, flaccid consistency caught attention. No smelly vaginal discharge was detected. The performed laboratory findings, within normal range. CRP indicator showed (108). Bacteriological analysis of blood culture was sterile under conditions of treatment. From vaginal flora and postoperation culture *Staphylococcus aureus*, *Staphylococcus epidermidis* was incubated. Identification of Diagnosis: According to the Patient's clinicolaboratory findings the primary diagnosis is hematometris. She underwent vacuum aspiration, a number of blood clots were discharged and the patient was prescribed antimicrobial chemotherapy empirically. In spite of the treatment the patient's condition had not improved,

her uterus was still larger in size, with flaccid consistency sub-febrile temperature (T-37.1°C). Under ultrasound observation body muscle layer of the uterus appeared hyperplastic and heterogeneous and venous plexus dilated. On the basis of clinical instrumental investigation vacuum aspiration was carried out once more. The obtained material was investigated with pathomorphological and bacteriological methods. The diagnosis of acute metroendometritis, metroplebitis was identified. After the Conservative treatment failure, on the 12th day of postpartum the patient underwent a hysterectomy, to get rid of the infectious focus. After that antibacterial and pathogenetic treatment was continued. Pathomorphological investigation of postoperative material revealed deep infiltration at the site of attachment of the placenta, fibrinopurulent endometritis with destructive miometritis, and metro phlebitis. The patient was discharged from the hospital on the 17th day of postpartum in a satisfactory condition, and she is still healthy.

Case report 3. A female patient, age 24, was admitted to hospital with the diagnosis of pregnancy in 33₁₇ weeks, three fetuses, in the first stage of labor. Underwent a Caesarean section operation (antibiotic therapy was administered according to the Protocol), on the second day of postpartum she had temperature (T-37.2°C), general weakness, shortness of breath, dizziness, tachycardia (P-102). On the 3rd day of postpartum abdominal distention, urinary obstruction, smelly vaginal discharge developed. She had a history of 8 years of primary sterility, and then artificial insemination of three fetuses. Being in the 2nd trimester of pregnancy (24-28 week period pregnancy), she had been undergoing treatment at hospital because of the risk of preterm labor and right-sided Pyelonephritis. According to the objective data on the 4th day of Postpartum temperature was 38.4 degrees C (under antibiotic therapy), P-120, T / A135 / 90 mmHg, R-23-24. Liver stuck out of the rib cage for 1.5 cm, Costovertebral angle tenderness positive on both sides, on palpation and with ultrasound uterus revealed to be flaccid, painful, dimensions: 90 X70X80, the muscle layer of the uterus body proliferative, homogenous, dilated venous network (plexus), the survey was conducted again on the 6th day, cesarean section stitch site complicated. Laboratory findings revealed: leukocytosis -17.8, band neutrophil -14, Hemoglobin -5,8 gm/dL, ESR -75 mm/hr, Protein -44 g /L, Albumin - 25%, urea - 30 mmol/L, Creatinine -558 ml.g, the liver function panel dramatically increased. Laboratory investigation of blood and vaginal smear detected: *Staphylococcus epidermidis*, *E.Coli*. Identification of Diagnosis: diffuse serous purulent peritonitis, postcesarean severe sepsis, purulent necrotic endometritis, anemia, septic pyelonephritis, bilateral pleuropneumonia, Sinus tachycardia. On the 7th day of postpartum, on the basis of the patients' complicated clinical laboratory tests operation was carried out: relaparotomia, hysterectomy, abdominal healing, and drainage. Pathomorphological investigation of the postoperative material revealed croupous necrotic purulent endometritis, and in the site of caesarean section a destructive, croupous necrotic purulent ulcerative endomyo-perimetritis, thrombophlebitis, interstitial hematoma of the cervix was detected. The patient stayed in hospital for

20 days. She was discharged from the hospital in a satisfactory condition.

Conclusion:

According to the above analyzed clinical cases, postpartum acute infections do not tend to decrease in number. It should be noted that a number of researchers agree to this statement. [4, 6, 10] According to the above analyzed clinical cases, postpartum endometritis, caused by various etiological factors are characterized with different clinical symptoms, and in most cases primary symptoms are minimal, which is the cause of inadequate antimicrobial therapies and is the cause of inadequate assessment of the infection focus. Although if we summarize the above mentioned cases we can conclude that there is always an indistinct picture of endometritis present locally. Anamnesis of the patients deserves our interest. In all the three cases, the patients had infectious diseases during pregnancy, which was a risk factor to develop acute infections in the delivery and postpartum period. [8, 9] As it's known, after labor and caesarean section cervix is open. It is open for pathogenic microorganisms to enter and disseminate. [12, 13] Range of microorganisms which cause postpartum acute infections is very high. [7,10] It makes us think that there always exist some, more or less pathogenic microbes that can cause sepsis in the suitable environment. According to the above mentioned we want to state that timely detection of etiologic factors tending to provoke inflammation processes and initiating appropriate etiopathogenic treatment is very important because long term antibiotic treatment, infectious focus control with surgical methods, septic shock, polyorganic insufficiency and death is the result of delayed initiation of postpartum acute infection treatment.

Acknowledgements:

Vakhtang Bochorishvili Sepsis National Center. Ltd. Clinic of David Gaga.

REFERENCES

- [1] Dr Lale Say, MD, Doris Chou, MD , Alison Gemmill, MPH , Özge Tunçalp, MD , Ann-Beth Moller, MSc , Jane Daniels, PhD , A Metin Gülmezoglu, MD , Marleen Temmerman, MD , Leontine Alkema, PhD. Global causes of maternal death: a WHO systematic analysis. The Lancet Global Health journal. Volume 2, No. 6, e323–e333, June 2014.
- [2] Samiksha Singh, Gudlavalleti V. S. Murthy, Anitha Thippaiah, Sanjeev Upadhyay, Murali Krishna, Rajan Shukla, S. R. Srikrishna. Community Based Maternal Death Review: Lessons Learned from Ten Districts in Andhra Pradesh, India. Maternal and Child Health Journal. ISSN 1573-6628. Year : 2010. Volume : 54. Issue : 2 .Page : 57-64. update: 31 Jan 2015.
- [3] MD. M. Daraselia, PHD. Obstetric and gynecological sepsis prevention. Georgian Scientists and Specialist Association. Department of Medicine. GSSA XXXV Annual Convention and Antenatal Medical conference. Medicine of New Millennium. Volume:1. Issue35. Page.3. 22.02.2014
- [4] David A. Eschenbach, MD. Serious Postpartum Infections. Department of Obstetrics and Gynecology, University of Washington, Seattle, Washington. The Global Library of Women's Medicine. ISSN: 1756-2228. <http://www.glowm.com>. Update due 2015
- [5] Mackeen AD1, Packard RE, Ota E, Speer L. Antibiotic regimens for postpartum endometritis. The Cochrane library. Published Online: 2 FEB 2015. Assessed as up-to-date: 30 NOV 2014. DOI: 10.1002/14651858.CD001067.pub3
- [6] Van Dillen, Jeroena; Zwart, Joostb; Schutte, Jokec; van Roosmalen, Josb, d. Maternal sepsis: epidemiology, etiology and outcome. Current Opinion in Infectious Diseases. June 2010 - Volume 23 - Issue 3 - p 249-254. doi: 10.1097 / QCO.0b013e328339257c.
- [7] Nanuashvili A. Bacterial infections. Normal flora of the female reproductive system 2009. ISBN 978-9941-0-2057-5. 314 pages. Publisher- LTD Press "Georgian Herald"
- [8] Schnarr J, Smaill F; Asymptomatic bacteriuria and symptomatic urinary tract infections in pregnancy. Department of Obstetrics and Gynecology, Faculty of Health Sciences, McMaster University, Hamilton, Canada. Journal of NICE Clinical Knowledge Summaries Eur J Clin Invest. 2008 Oct; 38 Suppl 2: 50-7. doi: 10.1111 / j.1365-2362.2008.02009.x.
- [9] Guise JM, Mahon S, Aickin M, Helfand M. Screening for Bacterial Vaginosis in Pregnancy. Rockville (MD): Agency for Healthcare Research and Quality (US); 2001 Apr. Report No. : 01-S001. US Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence. Am J Prev Med. 2001 Apr; 20 (3 Suppl): 62-7
- [10] Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 2010. ISBN: 978-0443-06839-3. 4320 pages. Trim Size: 8 3/16 in. Inspritt: Churchill Livingstone.
- [11] Stephansson O1, Sandström A, Petersson G, Wikström AK, Cnattingius S. Prolonged second stage of labour, maternal infectious disease, urinary retention and other complications in the early postpartum period. An International Journal of Obstetrics & Gynaecology. published online: 20 JAN 2015. DOI: 10.1111/1471-0528.13287
- [12] Relman DA, Falkow S. Infect Agents Dis. Identification of uncultured microorganisms: expanding the spectrum of characterized microbial pathogens. 2010. Oct; 1(5): 245-53.

- [13] Guise JM, Mahon S, Aickin M, Helfand M. Rockville (MD): Agency for Healthcare Research and Quality (US); Screening for Bacterial Vaginosis in Pregnancy. 2001 Apr. 20(3Suppl):62-72. PMID:11306234