

Case Report

Pelvic Thrombophlebitis: a Case Report of a 34-Year-Old Woman with *Klebsiella* Positive Blood Culture

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Abstract

Background: Septic Thrombophlebitis is one of the rare complications of hysterectomy, which is well known through an uncontrolled fever after wide spectrum antibiotic therapy. One of the very rare pathogens to cause bacteremia in this situation is *Klebsiella pneumonia*, which is a vaginal normal flora. Although it is accepted that the main treatment for thrombophlebitis is anticoagulant therapy, however, in cases with co morbid bacteremia antibiotic therapy remains a critical procedure.

Cases Report: We present a case with a history of recent hysterectomy who was admitted to the Vali-e-Asr hospital of Zanjan with uncontrolled high fever 72 hours after her surgical procedure.

Conclusion: Fever is one of the most common post-surgical complications which could be due to post-operative infections. Thrombophlebitis of pelvic veins is one of the very rare complications which can alternatively cause bacteremia. Although uncommon, *Klebsiella* could be the leading cause of bacteremia. So it is important to consider a thorough work up in patients presenting with fever after hysterectomy.

Keywords: Pelvic Thrombophlebitis, *Klebsiella*, Hysterectomy

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Introduction

The most common invasive procedure in gynecology is known to be hysterectomy which is done in three styles: Trans abdominal, Trans vaginal and laparoscopic. Although infection is one of the complications, however, the rate of infectious disease is reported to be higher in vaginal manner while the rate is much less in laparoscopic procedure⁽¹⁾. Febrile morbidity is one of most common infections which are defined as a T > 38°C on 2 occasions measured with a 6 hours gap in between while at least 24 hours is passed from the operation⁽²⁾. If this febrile

morbidity happens to follow a spike-like pattern, in which the patient may feel alright between the episodes while resistant to the broad spectrum antibiotic therapy, one the very rare yet important differential diagnosis should be Septic Pelvic Thrombophlebitis (SPT)⁽³⁾. SPT is actually one of the two clinical forms of pelvic vein thrombophlebitis which is best known for its recurrent fever with relative tachycardia and otherwise normal findings on physical examination⁽⁴⁾. SPT usually presents with fever in the early postpartum or postoperative period (usually within three to five days), although the onset may be delayed to up to three weeks following

delivery⁽⁵⁾. SPT is best diagnosed clinically through excluding other etiologies of a recurrent fever which won't be controlled with antibiotic therapy. It should be suspected in any patient presenting with persistent fever with unexplained etiology after any procedures or infections involving the pelvic⁽⁶⁾. Not being diagnostic, white blood cell count elevation and bandemia (neutrophilia) could be helpful. In some cases imaging studies may come handy such as pelvic ultra-sonography, computed tomography (CT) or magnetic resonance imaging (MRI)⁽⁷⁾. The diagnosis is best confirmed if defibrilization is achieved 48 hours after systemic anticoagulant therapy⁽⁸⁾.

As the second most common cause of gram-negative bacteremia, *Klebsiella pneumoniae* seems to be increasing as an invasive pathogen occasionally causing serious complications⁽⁹⁾. There are two patterns for treatment of *Klebsiella* bacteremia: mono-therapy and combination-therapy; which studies show that the combination-therapy is indeed associated with higher range of survival compared with mono-therapy⁽¹⁰⁾.

Case Report

An obese 40-year-old woman was admitted to the hospital with a complaint of persisting high grade fever which initiated 72 hours after going through a trans-abdominal hysterectomy. Her young daughter reported a fever of 40°C degrees with thermometer at home before admitting. Except for her surgical medical history of one time cesarean section and the recent trans-abdominal hysterectomy, she was otherwise healthy. She also gave a history of hospital discharge on the morning she was admitted to our hospitals infectious ward. She said she was hospitalized for almost 10 days for her high fever and although she was given different types of antibiotics, her fever was left completely unchanged. She was a little agitated, however, was not ill or toxic. A body temperature of 39.5°C was detected and she was tachycardic with a heart rate of 100 beats per minute. Her respiratory rate was 22 and her blood pressure was 100/70 mmHg. The auscultation of lungs revealed nothing abnormal and her abdominal examination was normal, too. Without any signs of infection in the surgical wound. She had no

complaints of vaginal discharges, dysuria or frequency.

Since she was febrile and tachycardic, sepsis work up was our first assessment. On laboratory data she showed leukocytosis with neutrophilia (WBC=12900, Neut=88.8%), she was not anemic. The urine analysis was active while the urine culture was normal. Because she was in endemic area for brucellosis, the brucella serology was checked and was negative. The other taken tests were all normal except for her blood culture which was positive for *Klebsiella pneumoniae*. With the active urine analysis and the positive blood culture for *Klebsiella* we initiated antibiotic therapy with Amp/Imipenem 500 mg Q6hrs and Amp/Vancomycin 1gr Q12hrs. Vancomycin was started when the result of urine analysis reported to be positive, but, it was discontinued when *Klebsiella* bacteremia was reported. After 48hours the patient was still febrile so we suspected SPT. We performed an abdominal ultra-sonography and spiral CT scan which was normal. The simple CXR and the mediastinal spiral CT scan was also normal. However, the color-Doppler sonography of pelvic revealed incidence of right pelvic vein thrombosis which took us one step closer to our suspected diagnosis. The echocardiography which performed to rule out embolisms was also normal. On the basis of these findings and our strong clinical suspicious of SPT we added prophylactic Enoxaparin 40mg SC daily to our already initiated antibiotic therapy. The results were dramatic. After 48 hours the patient was defebrelized and the blood culture results which were sent 48 hours after the initial antibiotic therapy were now negative. We continued Enoxaparin for one week. The patient was discharged from Vali-e-Asr hospital of Zanjan at day 14 and in the 8weeks follow-up she was defebri and completely alright.

Discussion

Post-operative infections of abdominopelvic surgeries which are usually followed by fever include wound cellulitis, wound abscess, endomyometritis, pelvic cellulitis and rarely pelvic thrombophlebitis. Not only infectious etiology but also non-infectious etiologies may cause refractory, recurrent fever. Simple fever usually may respond to antibiotic within 24 to 48 hours if appropriate antibiotics are selected⁽¹¹⁾. As in

gynecology hysterectomy is the most common procedure operated mostly for benign etiologies. Since there are 3 distinct styles in hysterectomy, it is approved that vaginal hysterectomy is most prone to infection compared with laparoscopic hysterectomy; however the micro-organisms are almost the same⁽⁷⁾. There are two types of pelvic vein Thrombophlebitis: Ovarian Vein Thrombophlebitis and Septic Pelvic Vein Thrombophlebitis. Physical manifestations are almost the same between these two types. However, pelvic pain and hypo gastric tenderness is mostly seen in OVT while significantly no pain or tenderness in abdomen or surgical wound is the significant physical examination in SPT⁽⁴⁾. SPT is mostly suspected in patients with recurrent non-responsive to wide spectrum antibiotic therapy with a spike-like pattern, who had gone through operation within 3 weeks. However, Thrombophlebitis patients present with recurrent fever mostly within 72 hours of surgery. The best known treatment for pelvic thrombophlebitis is anticoagulant therapy in most cases for a period of one week to reach a PTT of 1.5 to 2.0 times the patients baseline⁽⁸⁾. The case we presented had not only the rare complication of her recent hysterectomy, but also had a bacteremia of *Klebsiella pneumoniae*, which is reported to be a progressive invasive pathogen as a gram-negative microorganism, if left untreated, could even cause death⁽⁹⁾. There are two different regimens introduced for the treatment of *Klebsiella* bacteremia, mono therapy and combination therapy. It is recommended to start a combination therapy to catch the best results⁽¹⁰⁾. However; we chose a mono therapy regimen with Imipenem which happened to be very effective in our patient.

Conclusion

Pelvic thrombophlebitis is a very rare complication of pelvic surgical procedure such as hysterectomy. Although rare it is important to be diagnosed because it is mostly presented with a recurrent fever with resistant to any antibiotic given to the patient. These patients could reach full recovery with anticoagulant therapy.

As for *Klebsiella* bacteremia which is indeed a dangerous invasive gram negative pathogen, the treatment remains challenging. Although combination therapy is recommended we profited the mono therapy which indicates further trials in this field.

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