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Case Report

A rare association of puerperal ovarian venous thrombosis with pseudomembranous colitis

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ABSTRACT

Ovarian venous thrombosis is a rare but serious complication associated with early puerperium. The risk of this complication increases with associated puerperal infection or inflammatory condition. The present case report is of a 36-year-old lady who presented after emergency caesarean with puerperal fever and abdominal pain along with diarrhoea post antibiotic cover. Patient presented with moderate ascites and uterine subinvolution on examination. Contrast enhanced computed tomography (CECT) showed evidence of bowel wall edema due of colitis along with ovarian vein thrombosis. Patients had persistent symptoms despite receiving an empirical course of injectable cephalosporins. Stool culture confirmed growth of *Clostridium difficile*. Patient developed a rare infection after a course of antibiotic i.e. pseudomembranous colitis caused by *Clostridium difficile*. Patient then received a course of injectable vancomycin after which colitis subsided. This case increases our vigilance on management of puerperal fever which could get complicated with life-threatening events like deep vein thrombosis.

Keywords: Puerperal fever, Colitis, Venous thrombosis

INTRODUCTION

As Virchow postulated, local trauma to endothelium and hypercoagulability predisposes to venous thrombus development.¹ All of these events have significant association with normal pregnancy. The risk of thromboembolism during the third trimester and the puerperium is seen to be six and 22 times higher than those in non-pregnant women respectively.² Advanced maternal age, multiparity, prolonged immobility, obesity, previous thromboembolic event, caesarean delivery, infections, inflammatory disease are some of the risk factors associated with increased risk of thromboembolism.¹ Now-a-days we see lesser incidence of thromboembolism due to early ambulation post-delivery. Also, better diagnostic facilities help in early treatment that reduces the risk to maternal health significantly.

Over the past few decades the incidence of empirical use of antibiotics postoperatively has increased worldwide. The indigenous gut microbiota that protects the intestines from colonization and infection by pathogenic organisms is in turn disrupted. This in turn stimulates the growth of organisms like *Clostridium difficile* that produce toxins after disruption of normal gut flora.³ The risk increases up to six-fold during antibiotic therapy and in the subsequent months afterwards. This is more commonly associated with clindamycin, third generation cephalosporins, penicillin and fluoroquinolones.⁴

As infection increases the risk of thromboembolism in the puerperium, we see here a rare case of ovarian venous thrombosis aggravated by antibiotic induced colitis. Such rare coexistence increases our vigilance when treating puerperal fever, keeping in mind the latest antibiotic policies and avoid the risk to maternal health.

CASE REPORT

A 36-years old, multipara (para 3) underwent emergency lower segment caesarean section for breech presentation in labor at a sub district hospital. Patient presented in the emergency room of the department of obstetrics and gynecology of Goa Medical College on 18th postoperative day.

Patient received antenatal care in the sub district center and had antenatal hemoglobin of 8.9 g/dl recorded in her last trimester. No history of associated comorbidities or allergies was noted. Past obstetric history included two vaginal deliveries with no complications.

Patient gave history of blood transfusion on second postoperative day with one pint of packed red blood cells due to low postoperative hemoglobin i.e. 6.6 g%. There was no history of postpartum hemorrhage elicited. On second postoperative day small subcutaneous lump was noted in the central region of the caesarean wound. Patient also developed one episode of fever on third postoperative day for which a course of injectable ceftriaxone was given empirically for a period of seven days. After this the fever subsided, but the patient complained a loss of appetite and loss of weight. Fever then recurred and was followed by diarrhea, two days prior to referral. This was associated with the onset of lower abdominal dull aching pain and abdominal distension; patient was then referred to our tertiary care center.

At admission, per abdomen examination revealed ascites with uterine subinvolution. There was also evidence of small nontender mobile midline swelling under the healed caesarean wound. On per speculum examination there was no foul-smelling lochia, or any other abnormality detected.

Biochemical evaluation showed leukocytosis (total count: 17500/cmm) with neutrophilia (N: 81 cells/cmm), hypokalemia (potassium: 2.6 mmol/l), hypoproteinemia (total protein: 5.1 g/dl). Ascitic fluid examination showed neutrophilia with few pus cells and negative result for gram staining (Table 1).



Figure: Arrows 1 shows small bowel loops in right iliac fossai with bowel edema. Arrow 2 shows right ovarian vein thrombus with central hypodensity and enhancement of vessel wall.

Radiological examination included abdominal sonogram that showed evidence of ascitic fluid with fluid in between bowel loops and anterior abdominal wall hematoma. Contrast enhanced computed tomography (CECT) of abdomen and pelvis was then performed which suggested ascites with bilateral pleural effusion, postoperative endometritis, edema of bowel wall and postpartum ovarian vein thrombosis (Figure 1).

Patient received injectable cefoperazone-sulbactam and injectable metronidazole for 5 days, along with correction of electrolyte imbalance, but symptoms persisted. Stool culture showed growth of *Clostridium difficile*, the most diarrheagenic pathogen associated with hospitalized patients.⁵ Patient received treatment for pseudomembranous colitis with injectable vancomycin for a course of 10 days. Patient symptomatically improved. Repeat computed tomography (CT) scan showed resolution of colitis as well as ascites and persistence of ovarian vein thrombosis. Patient was started on low molecular weight heparin after resolution of abdominal wall hematoma and discharged to home.

Table 1: Laboratory examination of the patient.

	Day 1	Day 5	At discharge
Hemoglobin (g/dl)	12.8		11.7
Hematocrit (%)	36		33%
WBC count (cells/cmm)	17000		12500
Urea (mg/dl)	10		12
Creatinine (mg/dl)	0.5		0.7
SGOT (units/l)	15		14
SGPT (units/l)	12		24
ALP (units/L)	103		112
Total protein (g/dl)	5.1		6.0
Serum potassium (mmol/l)	2.2	3.2	4.2
Serum sodium (mEq/l)	139		
Prothrombin time (sec)	12		12
INR	0.99		1.2
Stool culture		Growth of <i>Clostridium m difficile</i>	
Urine routine examination	No pus cells/no proteinuria/ normal specific gravity		
Urine culture	Sterile		
Blood culture	Sterile		
IgM leptospira/ dengue	Negative		

Continued.

	Day 1	Day 5	At discharge
Smear for malarial parasite	Negative		
Widal test/typhoid Ig	Negative		

DISCUSSION

Ovarian vein thrombosis presents with pelvic pain and fever. During the current case study, we were able to point out some of the high-risk factors associated with the case that increased the risk of thromboembolism. Postpartum ovarian vein thrombosis is a rare puerperal complication, with an incidence of 1/600 and 1/2000 deliveries. It occurs in 0.05% of all pregnancies that results in live births.⁶ Risk of thromboembolism is doubled in women with caesarean delivery. The risk is even more when associated with postpartum infection as seen in this case.¹ The risk of thromboembolism is slightly higher in women with advanced maternal age and approximately doubled in women with multiparity.⁷ The preferred diagnostic tool is CECT scan which has high sensitivity and specificity along with cost-effectiveness.⁸ Treatment of ovarian vein thrombosis includes combination of anticoagulants and antibiotics empirically when there is suspicion of septic thrombophlebitis.⁹

Pseudomembranous colitis as seen in other studies presents in hospitalized patients with diarrhea, fever and abdominal pain. Patient received an empirical course of broad spectrum antibiotic due to fever which was followed by the range of symptoms. With the prophylactic use of antibiotics in the postoperative period, emergence of new organisms that attack the normal bowel lining has made the new medical era challenging. *Clostridium difficile* is the main pathogen of nosocomial infection and antibiotic induced diarrhoea.¹⁰ Presentation with *Clostridium difficile* infection can range from asymptomatic carriage to lethal toxic megacolon.¹¹ Proper antibiotic stewardship programmes have been recommended with accurate choice of antibiotic, its dosage and duration which is necessary to prevent emergence of organisms like *Clostridium difficile*.¹¹

CONCLUSION

Occurrence of postpartum ovarian vein thrombosis is a life-threatening condition which needs immediate attention to avoid further morbidity. With strict monitoring and early ambulation incidences of thromboembolic events can be prevented.

Here we had a unique but rare case of postpartum ovarian vein thrombosis complicated by occurrence of antibiotic induced colitis due to empirical use of broad-spectrum antibiotics. We learned the need to streamline our antibiotic protocols and not to ignore the occurrence of such rare infections. Such infections have been on a

significant rise over the past three decades, bringing us to the importance of adherence to the policies to control not only resistance but also emergence of newer nosocomial infections.

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