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**Case Study**

**PHARMACEUTICAL AND CLINICAL STUDY OF POST-PARTUM PERITONITIS: A CASE STUDY**

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**ABSTRACT**

Introduction: Peritonitis is the inflammation of peritonium, the thin tissue that lines the inner wall of the abdomen and covers most of the abdominal organs. Peritonitis may be localized or generalized, and may result from infection or from a non-infectious process. Case presentation: We present a case of a 21 years-old female patient with postpartum peritonitis who was admitted in the hospital. The diagnosis concluded with intestinal obstruction, fluid leakage along with bacterial and fungal infection. A successful laparotomy was performed. The patient was injected with different antibiotics, supplement and pre-operative and post-operative drugs. The patient is still admitted in the hospital and under observation. Conclusion: The patient is still under observation and is recovering fast after the surgery and medication. Our case report emphasizes that negligence of the physician while diagnosing can lead to severity of the disease and proper medical care is required during delivery to avoid postpartum infections.

**Keywords:** Peritonitis, post-partum, laparotomy, medical and pharmaceutical care.

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**Consent:** A written consent of the patient was gained before proceeding and the educational purpose of this case report was explained.

**INTRODUCTION**

Peritonitis <sup>[1]</sup> is an inflammation of the peritoneum, the thin tissue that lines the inner wall of the abdomen and covers most of the abdominal organs. Peritonitis may be localized or generalized, and may result from infection (often due to rupture of a hollow organ as may occur in abdominal trauma or appendicitis) or from a non-infectious process. Antibiotics are usually administered intravenously.

Cause of peritonitis:<sup>[1]</sup>

There are two types of causes for peritonitis:

- 1) Infected peritonitis:
  - Perforation of part of the gastrointestinal tract is the most common cause of peritonitis. Perforations may be due to ulcers, carcinoma, ingestion of sharp foreign object, ascites and the perforation of hollow viscous mixed bacteria are obtained; mostly Gram-negative (e.g., *E. coli*) and anaerobic bacteria (e.g., *Bacteroides fragilis*)<sup>[2]</sup>
  - Disruption of peritonitis caused by surgical wound, trauma, peritoneal dialysis and chemotherapy. The bacteria usually found are of cutaneous species for example *Staphylococcus aureus*.
  - Systemic infections like tuberculosis may rarely have a peritoneal localization.
- 2) Non-infected peritonitis:
  - Leakage of sterile body fluid into the peritoneum such as blood, gastric juice, bile, urine and pancreatic juices. It is important to note that while these fluids are sterile at first, they frequently become infected once they leak out of the organ, leading to infectious peritonitis within 24-48 hours.
  - Sterile abdominal surgery under normal circumstances causes minimal generalized peritonitis.

**CASE PRESENTATION**

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21 years-old, female patient weighing 57kg came to the hospital with a 3 day-history of persistent abdominal pain. The patient had a delivery 4 days before, giving birth to a healthy child, by normal vaginal delivery. The patient had been discharged the following day on oral metronidazole and amoxicillin. The family history shows no significant or serious diseases. Patient has not undergone any surgery in the past, neither shows hypersensitivity to any specific substance. She doesn't have any complicated disease either. Upon coming to the hospital, 4 days after the delivery, the patient was diagnosed with constipation and was discharged on stool softeners. The patient re-presented in the hospital 2 days later, she had tachycardia with a heart rate of 100 beats per minute. Abdominal examination affirmed distention and tenderness. The patient also complained of fever (38°C), chills, vomiting and nausea accompanied by a loss of appetite and constipation. She was immediately admitted in the hospital. The patient was monitored for different laboratory tests as follows:

Renal Function Test

Test	Result	Units	Reference ranges
Creatinine	132	μmol/l	60-125
urea	6.70	μmol/l	3.3-6.7

Glucose fasting:

Test	Result	Units	Reference ranges
Glucose fasting	7.9	mmol/l	(4.2-6.4)

Electrolyte (Na, K, Cl):

Test	Result	units	References range
Sodium	130.4	mmol/l	136-148
Potassium	4.49	mmol/l	3.6-5.2
Chloride	99.9	mmol/l	98-108

Urine sugar

Test	Result
Urine sugar	Nil

FBC by analyzer:

Test	Result	Units	Reference ranges
HGB	10.2	g/dL	12-15
PLT	369	x19 <sup>9</sup> /L	150-400
WBC/TLC	14.0	X10 <sup>9</sup> /L	4-11

C-Reactive Protien:

Test	Result	units	Reference ranges
C-Reactive Protien(CPR)	>6	mg/L	Negative: <6 Positive: >6

RFT:

Test	Result	Units	Reference ranges
Creatinine	81	μmol/l	60-125
urea	7.34	μmol/l	3.3-6.7

Electrolyte (Na, K, Cl):

Test	Result	units	References range
Sodium	139.5	mmol/l	136-148
Potassium	3.20	mmol/l	3.6-5.2
Chloride	103.6	mmol/l	98-108

PT+INR, IMR+PT, APTT:

test	Result	units	Reference range
PT	16	Sec	12-15
INR	1.19	%	
APTT	36	seconds	30-43

Electrolyte with Bicarbonate:

Test	Result	units	References range
Sodium	135	mmol/l	136-148
Potassium	3.91	mmol/l	3.6-5.2
Chloride	107	mmol/l	98-108
Bicarbonate	24.7	mmol/l	22-28

In the postpartum period it is important to remember that the clinical signs of peritonism, guarding and rebound tenderness may be diminished or subtle due to abdominal wall laxity<sup>[3]</sup>. An ultrasound was performed of the pelvis and abdomen to rule out any products of conception. The ultrasound (Fig. 1), revealed an enlarged bulky uterus with a small amount of fluid in the cavity. In addition, abdominal X-ray taken supine showed distended loops of bowel<sup>[4]</sup> and on erect X-rays fluid levels were visible.

The ultrasound showed enlarged bulky uterus with fluid in the cavity and the erect X-ray revealed fluid levels thus indicating that the patient had a non-infectious peritonitis. This, later, led to the infectious peritonitis.

Cultures taken from the peritoneal fluid grew *Streptococcus feacalis* indicating a microbial infection in the peritoneum. This was treated by antibiotics mentioned later. Conservative management was advised and patient was referred to a general surgeon who performed a laparotomy<sup>[1]</sup> (surgery) which is required for a full exploration and lavage of peritoneum.

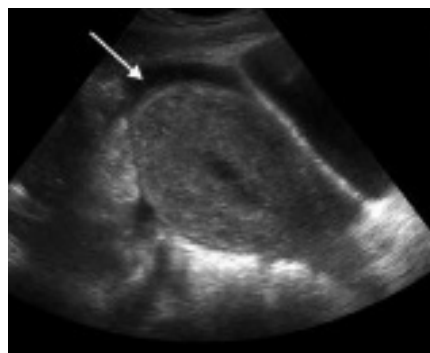


Figure1. Fluid present anterior to the uterus.

When the patient was admitted in the hospital, a surgery was performed four days later. Nasogastric (NG) tube was used every half hour for feeding. Patient's surgery was successful although the patient kept suffering from mild fever for 3 days after the surgery. Following medication was administered to the patient:

Pre-operative drugs: RL 1000mL injection IV, once daily, Cefactum injection IV 2g once daily, Dalacin C 600mg IV once daily, Trovas injection IV 100mL once daily, Plabolyte M, IV 1000mL given once.

Post-operative drugs: **Parentral** administration of drugs: RL 100mL injection IV once daily, Cefactum injection IV 2g once daily, Dalacin C injection IV 600mg once daily, Trovas injection IV 100mL once daily, Anafortan plus IM injection 4mL, as needed. **Oral** administration of drugs: Capsule Dalacin C, 300mg, thrice a day, Tablet Panadol, 600mg, daily, Capsule Omega, 20mg,

twice a day, Protein sachet, once daily, ORS, as required, Injection normal Saline, 1000mL, once daily.

### DISCUSSION

The clinical pattern of peritonitis is one of abdominal pain with nausea, vomiting and sometimes diarrhea or ascites. These symptoms may progress to shock which is fatal. In severe forms an abdominal catastrophe is mimicked and surgical intervention is practically mandatory. The peritoneum has a rich supply of pain fibers and a surface area equal to that of the skin. Any assault on this organ by bacteria or allergen can lead to sudden and drastic shock by a combined neurogenic and plasma losing mechanism.

A 21-year old female patient under study appeared in the hospital, with severe abdominal pain and constipation. The physician recommended a stool softener to the patient. But, 2 days later the patient re-presented with severe symptoms of vomiting, constipation and persistent abdominal pain upon which physician suggested some laboratory tests and ultrasound. The reports revealed inflammation of the peritoneum for which patient was immediately admitted to the hospital and referred to surgery. The diagnosis led to postpartum peritonitis after knowing that the patient delivered the child in a local, unhygienic maternity home of a village which became a cause of infection during the delivery. On admission to the hospital, the patient was then subjected to proper treatment and surgery was performed.

Antibiotics like cefactum and Dalacin were administered to the patient against bacteria causing peritonitis. Cefactum-a cephalosporin ( $\beta$ -lactum) antibiotic used for certain bacterial infections and are quite active against *E. coli* and *Bacteroides fragilis*, the common cause of peritonitis. Dalacin C (clindamycin) is also an antibiotic which prevents bacteria like *E. coli* and *staphylococcus* and *streptococcus* from producing their essential proteins. To confirm the susceptibility of drug against bacteria, blood sample of patient was tested. Other than antibiotics, anti-spasmodics like Anafortan plus and Panadol was also administered. For electrolyte balance hypertonic solution with electrolytes with carbohydrates (Plabolyte, and ORS) were used. RL solution (Lactated Ringer's solution) and Normal Saline solution were injected for resuscitation after blood loss due to the laparotomy performed. To improve the immunity of the patient fish oil capsules (Omega) were used. So this appears to be a rational treatment as the patient is moving towards a rational treatment.

This case reports signifies the fact that such rare yet fatal infection could have been prevented if the delivery was performed under hygienic conditions. The delayed and incorrect diagnosis led to the severity of the disease. This negligence of the medical staff during delivery and poor socio-economic status of the patient's family resulted in the patient's sickness. If the patient had been admitted in the hospital and the delivery was performed under hygienic condition then this situation could have been prevented. Other than that, if the physician had checked the patient correctly and diagnosed prior to the disease getting severe than the patient could have been prevented from surgery.

### CONCLUSION:

The patient is still admitted in the hospital and is under observation where her vitals are kept in check. She is recovering from her condition which indicates that the treatment she was subjected to was rational. The antibiotics used worked efficiently. The important point is, postpartum peritonitis is a rare condition<sup>[5]</sup>. This indicates poor medical care during the delivery of the patient<sup>[6]</sup> and negligence of the physician in diagnosing the disease. This infection might have led to a shock proving fatal for the patient.<sup>[7]</sup>

### RECOMMENDATIONS:

The patient is recommended to continue the treatment with prescribed medication and complete bed rest.

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