



## ACUTE PANCREATITIS: AS A REASON FOR PRETERM DELIVERY

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## ABSTRACT

Acute pancreatitis which is the rare reason for acute abdomen during pregnancy could cause morbidity or mortality. Physiologic changes of pregnancy affect the gall bladder and bile ingredients which play a crucial role in acute pancreatitis. Damage in the pancreas initiates local inflammation and damage in the pancreas however, systemic inflammatory response and multi-organ dysfunction are not rare. Additionally, acute pancreatitis during pregnancy could be a reason for preterm delivery as we aimed to present two cases in the last trimester of the pregnancy.

**Case 1:** A 19-year-old woman in her 33<sup>rd</sup> gestational week of pregnancy was admitted to the emergency room with acute abdominal pain and vomiting for 4 hours. She had a firm cervix on vaginal examination and ultrasonographic evaluation revealed a live fetus with a 2620 gr of estimated fetal weight, normal amniotic fluid index, and placenta. Laboratory tests presented as elevated serum amylase and lipase. A hydroptic gallbladder with multiple gall stones was detected in the abdominal ultrasound. The patient was hospitalized with an acute pancreatitis diagnosis. During the hospital stay, uterine contractions had initiated and cervical dilation has progressed. The patient was delivered a live baby and discharged on the 7<sup>th</sup> hospital stay. She was performed laparoscopic cholecystectomy 4 weeks after the delivery.

**Case 2:** A 28-year-old woman in her 35<sup>th</sup> gestational week was admitted to the emergency department with right upper quadrant pain. Abdominal and obstetric ultrasounds were uneventful. Laboratory examination revealed an elevated serum amylase and lipase. She was hospitalized. During the hospital stay; despite the medical treatments and prevention of oral intake, the levels of amylase and lipase and the abdominal pain have progressed. The patient was delivered via cesarean section. The levels of amylase and lipase decreased progressively, and the upper quadrant abdominal pain gradually decreased. The patient was discharged on day 7.

**Discussion:** Acute pancreatitis could cause a systemic inflammatory response which could lead to preterm delivery. Upper abdominal pain is the essential symptom and elevated serum amylase and lipase about 3-fold are the most common finding. Ultrasonographic evaluation of the gall-bladder and pancreas is crucial. Magnetic resonance cholangiopancreatography without contrast medium can also be used for diagnosis. A multidisciplinary approach is essential for treatment and follow-up. Obstetricians should evaluate fetal well being, and consider acute pancreatitis as a reason for threatened preterm labor.

**KEYWORDS :** Acute pancreatitis, preterm delivery, threatened preterm labor, acute abdomen, amylase, lipase,

## INTRODUCTION

Acute pancreatitis which is the inflammation of the pancreas with clinical, morphological, and functional changes, can cause serious morbidity even mortality. Incidence is about 1 / 3000 – 10.000 during pregnancy [1, 2]. Gallstones, alcohol, hypertriglyceridemia, hyperparathyroidism are the main reasons, yet it could be idiopathic too. Pregnancy hormones like estrogen, progesterone, and leptin affect the bile component, gall bladder function, and gall bladder smooth contractions. These changes could lead to gall stone and biliary stasis. Pregnancy could also increase triglycerides and compress the gallbladder mechanically. Injury of the pancreas initiates trypsinogen enzymes which lead to lysis of the pancreas, systemic inflammatory response, and multi-organ dysfunction. Patients have generally presented right upper quadrant or epigastric pain, nausea, and vomiting. Ultrasonography is crucial for gall bladder evaluation however, serum amylase and lipase levels are diagnostic. We aimed to present two patients who experienced acute pancreatitis in the last trimester of the pregnancy.

## Case 1:

A 19-year-old woman at her 33<sup>rd</sup> week of gestation was admitted to the emergency department with epigastric pain, and vomiting for 4 hours. Her vital monitoring was normal. The pain was radiating to the right upper quadrant and back. She did not have guarding or rebound tenderness. The fetal movement was good. She had a firm cervix without dilatation. Fetal ultrasonography showed, a single fetus with vertex presentation, and the estimated fetal weight was 2460 gr. Amniotic fluid was normal and no placental pathology was determined. Blood test presented as elevated liver function test, serum amylase, and lipase. No pathology detected in

triglyceride, cholesterol, calcium, C-reactive protein (Patient's laboratory results were presented in table1). On abdominal ultrasonography, the gall bladder was hydroptic with multiple gallstones with diameters less than 5 mm, and a 5,8mm in diameter gall stone in the choledochal duct. No pathology was reported in the pancreas. The patient was hospitalized with an acute pancreatitis diagnosis. The antenatal steroid was administered. On the first hospital stay day, the uterine contraction was initiated. Cervical examination revealed that 3 cm dilatation and 80% effacement. The patient was delivered via cesarean section. The patient abdominal pain was relieved after medical treatment and discharged on day 7. She had laparoscopic cholecystectomy 4 weeks after the delivery.

## Case 2:

A 28-year-old woman in her 35<sup>th</sup> week of gestation was admitted to the emergency department with a 6-hour onset of right upper quadrant pain. She had no previous disease with an unproblematic pregnancy antenatal care. The vital findings were normal. Obstetric ultrasound revealed a breech presentation fetus with 2800 gr estimated fetal weight, normal amniotic fluid, and placenta. Laboratory examination presented increased serum amylase and lipase yet normal levels of liver function test, triglyceride, cholesterol, calcium, C-reactive protein (Patient's laboratory results were presented in table1). Normal gallbladder, and bile tract, the mildly enlarged pancreas was shown in abdominal ultrasound. The patient was considered with idiopathic acute pancreatitis. She was hospitalized and followed with daily serum amylase and lipase levels. Progression of these parameters was detected and delivery was considered due to possible compression of the fetus on the liver and pancreas. The fetus

was delivered via cesarean section. The enzymes tended to decrease, and she tolerated the oral intake. The patient was discharged on the 7<sup>th</sup> day of hospitalization. She was still controlled by gastroenterology and surgeon physicians.

**DISCUSSION:**

Acute pancreatitis is a real emergency. The incidence is rare in pregnancy. Right upper quadrant pain radiating to the epigastric area and the back is generally represented to the clinic with a 3- fold increase in serum amylase or lipase [3]. Ultrasonographic evaluation is crucial for the gallbladder and bile ducts, especially for gall stones. Computerized tomography is adequate for the pancreas yet it is not preferred for pregnant women. Magnetic resonance cholangiopancreatography (MRCP) without contrast medium (gadolinium) provides important information about the pancreas, gall bladder, and the bile ducts without ionizing radiation [4, 5]. Patients who had been diagnosed with familial hypertriglyceridemia can experience acute pancreatitis during pregnancy due to the increased level of triglyceride as pregnancy physiological changes, yet the level of triglyceride is rarely above 300mg/dl in women without familial hypertriglyceridemia [6]. Acute pancreatitis occurs commonly when the serum levels are above 1000 mg/dl[6, 7]. Once the diagnosis is considered a multidisciplinary approach is essential with surgeons and gastroenterologists. Conservative management is the first step of the treatment with intravenous fluid. Cholecystectomy can be performed in all trimesters of the pregnancy in patients with gallstone pancreatitis however, surgeons mostly prefer conservative management in even non-pregnant patients. Yet, these patient could have recurrent pancreatitis attacks. Endoscopic retrograde cholangiopancreatography can be performed in experienced centers in pregnancy however safety of the procedure because of the ionizing radiation is controversial because studies with long-term follow-up of the fetuses are lacking [8, 9]. Although pancreatitis could cause serious complications for the patients, obstetricians should evaluate the fetal well-being and uterine contractions. There is no proper suggestion for the type of delivery but there was a case report representing a pseudocyst rupture during Valsalva efforts [10]. All patients should be tailored with the severity of pancreatitis, fetal well-being, and gestational week of the pregnancy.

	Case 1	Case 2		Case 1	Case 2
Age	19	28	Triglyceride mg/dl	107	38
Gestational week	33	35	AST u/l	127	10
C- Reactive Protein Mg/dl	0,19	3	Alt U/L	201	10
Leukocyte	14280	11860	Alcohol consumption	None	None
Total Bilirubin Mg/dl	0,89	0,10	GGT U/l	45	11
Fasting Glucose Mg/dl	83	85	Cholesterol Mg/dl	208	233
Calcium Mg/dl	8,7	8.98	Baby Weight	2620	2850
Amylase	5400	322	Apgar Score 1 <sup>st</sup> and 5 <sup>th</sup>	8-9	9-10
Lipase	1200	484			

Ultrasonography case 1:  
The gallbladder is hydropic with multiple millimetric stones. A 5.8 mm stone in choledochus. Pancreas is normal

Ultrasonography case 2:  
Gallbladder and bile tracts are normal. The pancreas is mildly enlarged.

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