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Case Report

# Acute pancreatitis secondary to primary hyperparathyroidism in a postpartum patient: A case report and literature review

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#### ABSTRACT

*Objective:* Primary hyperparathyroidism (PHPT) is a rare clinical entity in reproductive women. Unusual hypercalcemia causing pancreatitis in the peripartum period carries significant morbidity to both the fetus and the mother.

*Case Report:* A 38-year-old woman developed a morbid course of intractable intra-abdominal abscess by pancreatitis, hydronephrosis by renal lithiasis, and unusual neurological presentations soon after delivery. Serial serum calcium level and imaging studies lead to the final diagnosis of PHPT due to a parathyroid adenoma. Data on 14 patients who suffered from pancreatitis due to hyperparathyroidism were collected from a MEDLINE search. The reasons for delayed diagnosis and literature review of acute pancreatitis in PHPT are discussed.

*Conclusion:* Hypercalcemia can be masked during pregnancy and in severe pancreatitis, as was detected in about half of the case series. Clinicians should have a high level of suspicion of parathyroid adenoma in cases with a profound pancreatitis. Timely diagnosis and early therapeutic intervention are important to resolve complications and improve the outcomes of mothers and fetuses.

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#### Introduction

The occurrence of acute pancreatitis during pregnancy is uncommon, with a reported incidence from 0.02% to 0.1% [1,2]. Acute pancreatitis secondary to primary hyperparathyroidism (PHPT) is even less common. When a MEDLINE search using the keywords "pancreatitis", "hyperparathyroidism", and "pregnancy" for articles published between January 1965 and December 2011 was performed, only 14 cases were identified [3–16]. Lack of awareness or underreporting of this disease is probably responsible for the low reported incidence during pregnancy and postpartum [17].

We describe a patient whose initial presentation of PHPT was acute postpartum pancreatitis. While managing the intractable pancreatic abscesses, this patient developed uncommon

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neurological symptoms and hypercalcemia, which eventually led to the diagnosis of a parathyroid adenoma after a tortuous clinical course.

#### **Case presentation**

A previously healthy 38-year-old multiparous woman (gravida 8, para 3, induced abortion 4, spontaneous abortion 1) delivered a female infant at 37 weeks' gestation. The patient had no major medical history. She drank alcohol occasionally, and did not consume alcohol during this pregnancy. The neonate was in a healthy condition. The patient underwent a tubal ligation the day after her delivery. The next day she developed acute abdomen pain with sharp and persisting epigastric pain, which radiated to her back. An abdominal computed tomography (CT) scan revealed a swollen pancreas. The patient was diagnosed with acute pancreatitis (Fig. 1). Because of her hemodynamic instability, she was transferred to our hospital and admitted to the intensive care unit (ICU).





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Fig. 1. Abdominal computed tomography scan. A swollen pancreas with some peripancreatic fluid accumulation.

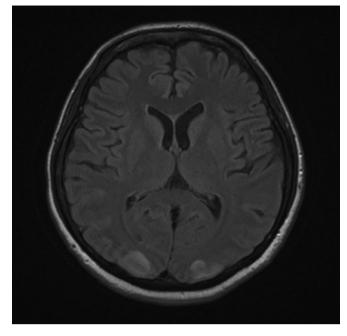
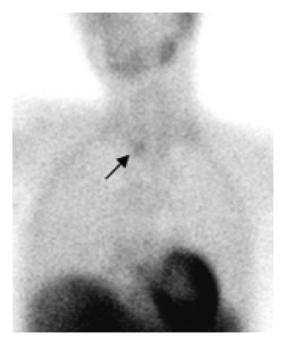


Fig. 2. Brain magnetic resonance imaging. T2-weighted imaging shows hyperintensity of the sulci of bilateral occipital lobes.

Upon ICU admission, her body temperature was 37.7°C, blood pressure was 110/76 mmHg, pulse rate was 135 beats per minute, respiratory rate was 32 breaths per minute, and oxygen saturation was 98% with a nonrebreathing oxygen mask. On physical examination, the patient had severe epigastric pain with diffuse tenderness over her abdomen. Laboratory test results showed leukocytosis (31,160/mm<sup>3</sup>), thrombocytopenia (44,000/mm<sup>3</sup>), high levels of serum amylase (3014 U/L), lipase (621 U/L), lactate dehydrogenase (LDH; 1297 U/L), impaired renal function (blood urea nitrogen 57 mg/dL, creatinine 3.2 mg/dL), and hypocalcemia (total calcium level 9.6 mg/dL, normal range 12-17 mg/dL). Arterial blood gas parameters were the following: pH 7.40, carbon dioxide partial pressure 28 mmHg, oxygen partial pressure 150 mmHg, bicarbonate level 108 mg/dL, and base excess -7.3 mEg/L. Analgesics, intravenous hydration, broad-spectrum antibiotics, and noninvasive positive pressure ventilation were provided. She improved gradually, and was transferred to the ward 7 days later with a normal calcium level. During her hospital stay, the patient underwent CT-guided percutaneous drainage of her pancreatic abscess. She complained of transient blurred vision, and visual field defects were detected. Before a definite diagnosis was reached, the patient's vision improved, and she was discharged.

Despite repeated percutaneous drainage, her abdominal CT revealed the inadequacy of abscess drainage and the development of the bilateral hydronephrosis caused by renal stones. Bilateral ureteral double-J stents were placed. Because percutaneous drainage did not significantly improve the patient's clinical condition, a laparotomy for retroperitoneal necrosectomy was performed. On the 2<sup>nd</sup> postoperative day, the patient complained of headache and blurred vision with eyes deviated to the left side. Subsequently, a transient seizure-like attack and loss of consciousness occurred. Laboratory studies indicated hypercalcemia 18 mg/dL, and hyperparathyroidism was suspected. Brain magnetic resonance imaging revealed hyperintensity within the sulci of the bilateral occipital lobes with increased leptomeningeal enhancement (Fig. 2). The intact parathyroid hormone (iPTH) level was elevated (508 pg/dL, normal range: 13–54 pg/dL). Neck ultrasound

and technetium Tc99m sestamibi scintigraphy with single-photon emission CT indicated a tumor in the lower right portion of the parathyroid gland (Fig. 3). Despite hydration and the administration of diuretics and pamidronate disodium, the calcium levels still remained high. Right parathyroidectomy was performed 11 weeks after childbirth. Histological examination confirmed the diagnosis of a parathyroid adenoma. Calcium and iPTH levels returned to normal after surgery, and the visual problem improved. The ureteral double-J stents were removed, and the retroperitoneal abscess was drained. The patient has received regular follow-up



**Fig. 3.** Single-photon emission computed tomography. A strong signal (arrow) is noted at the right inferior thyroid bed.

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