

## C A S E R E P O R T

# A peculiar manifestation and clinical course of occult primary hyperparathyroidism: a case report

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**Abstract.** We present the clinical case of a patient who developed acute hypercalcemia diagnosed after presenting acute pancreatitis. Male patient, age 67, arrived at the Emergency Department of the University Hospital of Parma for upper abdominal pain, radiated to the back, and associated with nausea. Laboratory tests showed elevation of lipase, serum calcium levels, serum PTH and serum creatinine. Due to the persistence on hypercalcemia an ultrasound scan of the cervical region was performed and showed a hyperechoic nodule of about 25x26x30 mm at the level of the lower pole of the left thyroid lobe, compatible with hyperplastic parathyroid. In the light of clinical-radiological examinations, acute edematous pancreatitis due to hypercalcemia was diagnosed. Hypercalcemia was attributable to primary hyperparathyroidism, so surgical indication to parathyroidectomy was given. After medical treatment there was a progressive improvement of the clinical conditions and a few days later the patient underwent surgical operation of lower left parathyroidectomy with progressive normalization of the serum calcium levels. If hypercalcemia persists after the beginning of a specific therapy there is an indication to perform an emergency parathyroidectomy; in our case the surgical procedure was performed some days after the diagnosis because the calcium serum levels had returned to normal values with significant improvement of the clinical conditions, despite persistence of high serum PTH. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** primary hyperparathyroidism, hypercalcemia, pancreatitis, parathyroidectomy

## Introduction

In recent years there has been an increase in the diagnosis of Primary hyperparathyroidism with an incidence, in the Western population, of 0.2-1%. The symptomatology of these patients is mostly nuanced. We present the clinical case of a patient who developed acute hypercalcemia diagnosed after presenting acute pancreatitis.

## Case report

Male patient, age 67, suffering from hypertension, type II diabetes and chronic renal failure under drug treatment with Metformin, Valsartan and Atorvastatin.

The patient arrived at the Emergency Department of the University Hospital of Parma on 23/01/2014 for upper abdominal pain, radiated to the back, and associated with nausea. The abdomen appeared to be soft but widely painful to palpation.

Abdominal ultrasound was performed and did not show pathological changes of liver, pancreas, spleen and kidneys. Laboratory tests showed elevation of: azotemia 50 mg/dL (n.v. 6-26 mg/dl), serum creatinine 1.6 mg/dL (n.v. 0.5-1.4 mg/dl), lipase 2188 U/L (n.v. 13-60 U/L) WBC 12870/mm<sup>3</sup> (n.v. 4000-10000/mm<sup>3</sup>), serum calcium 11.6 mg/dL (n.v. 8.3-10.5 mg/dl). Serum PTH levels were 471 pg/mL (n.v. 15-88 pg/ml).

Patient was set on total parenteral nutrition and on antibiotic therapy with Ceftriaxone (2 g/day) and Metronidazole (2 g/day).

On 28/01/19, hypercalcemia persisted, so an ultrasound scan of the cervical region was performed which showed a hyperechoic nodule of about 25x26x30 mm at the level of the lower pole of the left thyroid lobe, compatible with hyperplastic parathyroid. Furthermore, needle aspiration of the lesion was performed with diagnosis of parathyroid hyperplasia.

On 31/01/14 specialized surgical advice was required. The patient became lethargic and slowed down. Laboratory tests showed severe hypercalcemia, with serum calcium levels of 19.1 mg/dL (n.v. 8.3-10.5) and ionized calcium of 2.25 mmol/L (n.v. 1.13-1.32), hypokalemia 2.9 mEq/L (n.v. 3.5-5.3) and hypomagnesaemia 1.1 mEq/L (n.v. 1.6-2.5). The patient also presented with polyuria with increased serum creatine levels: 2.2 mg/dL (n.v. 0.5-1.4 mg/dl). An EKG was performed that showed sinus rhythm with the presence of an I degree AV block and a flattening of the T waves.

On the same day the patient underwent Magnetic Resonance Cholangiopancreatography in the suspicion of having developed pancreatitis. The examination showed dimensional increase and edema of the head and the uncinate process of the pancreas associated with densification of the peripancreatic fat planes. The gallbladder didn't present pathological alterations except for the presence of biliary sludge. Therefore, in the light of clinical-radiological examinations, acute edematous pancreatitis due to hypercalcemia was diagnosed. Hypercalcemia was attributable to primary hyperparathyroidism, so surgical indication to parathyroidectomy was given.

Therapy with loop diuretics, saline solution, bisphosphonates (zoledronate) and steroids (methyl prednisone) was set and electrolytes were reintegrated, obtaining the restoration of normal lab values and a progressive improvement of the clinical conditions. Antibiotic therapy was continued with Piperacillin/Tazobactam (13.5 g/day) and insulin treatment was administered instead of oral hypoglycemic therapy.

On 11/02/14 the patient underwent surgical operation of video-assisted lower left parathyroidectomy (MIVAP).

A video-assisted minicervicotomy was performed. After mobilization of the lower pole of the

left thyroid lobe, an inferior ipsilateral parathyroid gland of considerably increased size (about 3.5 cm), with hard-elastic consistency, tenaciously attached to the thyroid parenchyma in the deep paraoesophageal area was found. The size of the parathyroid gland and its tenacious adhesions to the surrounding tissues did not allow to perform the video assisted procedure, for this reason the surgical incision was extended. Parathyroidectomy was performed following identification of the left recurrent laryngeal nerve which presented a tortuous course and multiple adhesions around the parathyroid capsule. Following an accurate hemostasis, a single vacuum drain was positioned. The surgical access was closed with layered suture of the wound and intradermal skin suture.

Intraoperative serum PTH assay showed a significant decrease, higher than 50% compared to the initial value, in parathormone serum levels from time 0 (1579 pg/mL) to time 5 (457pg/mL) to time 10 (357 pg/mL) compatible with excision of the hyperfunctioning gland in a patient with reduced hormonal urinary clearance due to chronic kidney disease.

In the third postoperative day the patient presented paresthesia with serum calcium levels of 7,1 mg/dl. Intravenous infusion of 2 g of calcium gluconate were administered with symptoms remission. Oral therapy was then set up with sodium bicarbonate, calcium carbonate (1 g x3/day) and calcitriol (0.5 mcg x3/day), continued for five days after discharge. The remaining post-operative course took place regularly and the patient was therefore discharged on 15/02. Check-ups were continued during postoperative period, through laboratory tests, for about 10 days, with final values of: serum PTH 130 pg/mL, Calcium serum levels 7.7 mg/dL and serum creatinine 2.2mg/dL.

Final histological examination documented the presence of a parathyroid tumor.

## Discussion

In literature reported cases of acute hypercalcemia caused by primary hyperparathyroidism are rare. The diagnosis is often misunderstood until the patient is

admitted for an acute event involving the nervous system or the gastrointestinal tract. Our case is peculiar because of:

1. extremely high serum calcium levels;
2. the worsening of the neurological symptoms after cytological examination by needle aspiration;
3. the size of the gland;
4. serum PTH slightly higher than normal after the surgical procedure, due to renal impairment caused by hypercalcaemia with serum creatinin levels higher than normal values.

If hypercalcemia persists after the beginning of a specific therapy there is an indication to perform an emergency parathyroidectomy; in our case the surgical procedure was performed some days after the diagnosis because the calcium serum levels had returned to normal values with significant improvement of the clinical conditions, despite persistence of high serum PTH values (1-6).

**Conflict of Interest:** Each author declares that he or she has no commercial associations (e.g., consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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