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Long-Standing Pancreatic Hyperenzymemia: Is It a Nonpathological Condition?

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Key Words
Diagnosis · Hyperamylasemia · Lipase · Magnetic resonance imaging · Pancreatic ducts

Abstract
Chronic nonpathological pancreatic hyperenzymemia is characterized by a chronic, abnormal increase in the serum concentrations of the pancreatic enzymes including amylase, pancreatic isoamylase, lipase and trypsin. The diagnostic work-up that the physicians should recommend to subjects with hyperenzymemia to definitively assess this syndrome is still an open question. A 72-year-old female was admitted to our Pancreas Unit in December 2008 for the presence of long-standing pancreatic hyperenzymemia of 42 years duration. On admission, serum amylase activity was 160 IU/l (reference range 8–78 IU/l), serum pancreatic isoamylase activity was 91 IU/l (reference range 13–53 IU/l) and serum lipase activity was 127 IU/l (reference range 8–78 IU/l). Other laboratory examinations revealed normal blood tests except for total serum cholesterol, HDL cholesterol and serum triglycerides that was slight elevated. Abdominal ultrasonography demonstrated no alteration of the pancreatic gland. A magnetic resonance cholangiopancreatography was carried out according to our diagnostic work-up of patients with unexplained pancreatic hyperenzymemia. This examination revealed two small cystic lesions: one of 6 mm in diameter in the head of the pancreas and the other one of 9 mm in diameter in the body of the pancreatic gland. The duct of Wirsung was normal and the two cystic lesions were diagnosed as branch-type intrapapillary mucinous tumors of the pancreas. All patients with pancreatic hyperenzymemia should be strictly followed in high volume centers for pancreatic disease in order to early diagnose the possible appearance of morphological pancreatic alterations.

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Introduction

Chronic nonpathological pancreatic hyperenzymemia is characterized by a chronic, abnormal increase in the serum concentrations of the pancreatic enzymes including amylase, pancreatic isoamylase, lipase and trypsin [1–3]. The diagnostic work-up that the physicians should recommend to subjects with hyperenzymemia to definitively assess this syndrome is still an open question. We report a patient, who gave written informed consent for publication of her case, in whom branch-type intrapapillary tumor of the pancreas was found more than 40 years after the diagnosis of benign pancreatic hyperenzymemia.

Case Report

A 72-year-old female was admitted to our Pancreas Unit in December 2008 for the presence of long-standing pancreatic hyperenzymemia of 42 years duration. She was no drinker and had smoked about five cigarettes per day from the age of eighteen to the age of fifty. At the age of 30 years, arterial hypertension was diagnosed and the patient was treated from then until now with metoprolol at a dosage of 100 mg per day. On this occasion, she underwent routine blood analysis which showed a hyperamylasemia. Then she underwent, at least two times per year, determination of serum amylase for 22 years that resulted in the major part of assays elevated with sporadic normalization. For the subsequent 20 years (until now) amylase, pancreatic isoamylase and lipase were yearly determined on serum and the levels of these three enzymes were always elevated, ranging from 1.5 to 10 times the upper reference limit. Twenty years ago, at the age of 52 years, she underwent for the first time abdominal ultrasonography that showed a normal pancreatic gland. This examination was repeated yearly and it always showed a normal appearance of the pancreas. Thus, the patients had a diagnosis of chronic nonpathological pancreatic hyperenzymemia. On admission to our Pancreas Unit physical examination was normal, arterial pressure was 140/80 mm Hg, and cardiac rate was 74 beats per minute. Laboratory examination revealed normal blood tests: white blood cell count, hemoglobin, mean cellular volume, hematocrit, and platelet count; renal and hepatic functions (AST, ALT, GGT and alkaline phosphates) were also normal as well as plasma glucose, serum carcinoembryonic antigen, and serum CA 19-9. Total serum cholesterol was slight elevated at 225 mg/dl (upper reference limit 200 mg/dl), HDL cholesterol was 97 mg/dl (lower reference limit 45 mg/dl) and serum triglycerides were 93 mg/dl (upper reference limit 180 mg/dl). Serum amylase activity was 160 IU/l (reference range 8–78 IU/l), serum pancreatic isoamylase activity was 91 IU/l (reference range 13–53 IU/l) and serum lipase activity was 127 IU/l (reference range 8–78 IU/l). Abdominal ultrasonography demonstrated no alteration of the pancreatic gland (**fig. 1**). A magnetic resonance cholangiopancreatography was carried out according to our diagnostic work-up of patients with unexplained pancreatic hyperenzymemia. This examination revealed two small cystic lesions: one of 6 mm in diameter in the head of the pancreas (**fig. 2**) and the other one of 9 mm in diameter in the body of the pancreatic gland (**fig. 3**). The duct of Wirsung was normal and the two cystic lesions were diagnosed as branch-type intrapapillary mucinous tumors of the pancreas (**fig. 4**).

Discussion

To our knowledge this is the first case of long-standing pancreatic hyperenzymemia in a patient diagnosed as chronic nonpathological pancreatic hyperenzymemia in whom an intrapapillary mucinous tumor of the pancreas has been found after the initial diagnosis. It has been reported by Mortelé et al. [4] that a careful follow-up with imaging techniques should be carried out in patients with asymptomatic pancreatic hyperenzymemia. These authors reported pancreatic benign alteration at magnetic resonance cholangiopancreatography in more than 50% of patients with chronic asymptomatic hyperenzymemia. Thus, it is likely that chronic asymptomatic hyperenzymemia may be the sign of underlying benign pancreatic disease; this behavior may also be extended to subjects with familial hyperenzymemia [5]. In conclusion, we suggest that all patients with pancreatic hyperenzymemia should be strictly followed in high volume centers for

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pancreatic disease in order to early diagnose the possible appearance of morphological pancreatic alterations.

Fig. 1. Normal appearance of the pancreas at ultrasonography examination.

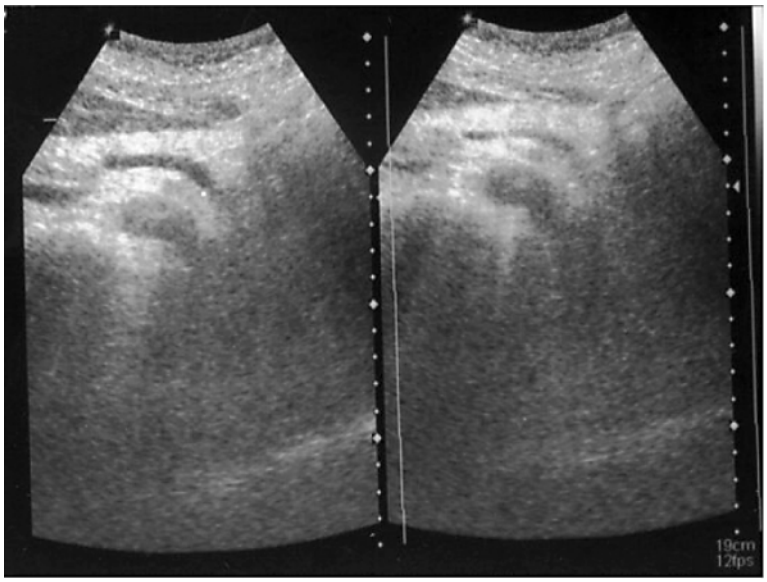

Fig. 2. Magnetic resonance image showing branch-type intrapapillary mucinous tumors of the body of the pancreas.

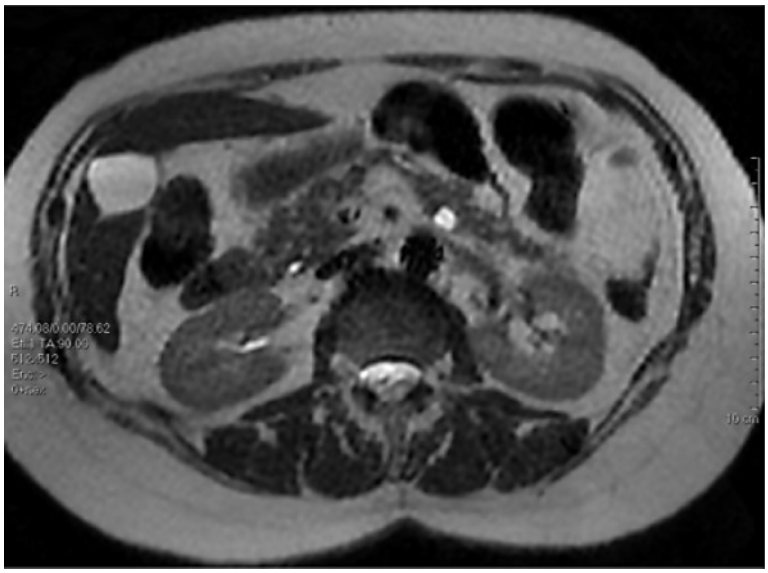

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Fig. 3. Magnetic resonance image showing branch-type intrapapillary mucinous tumors of the head of the pancreas.

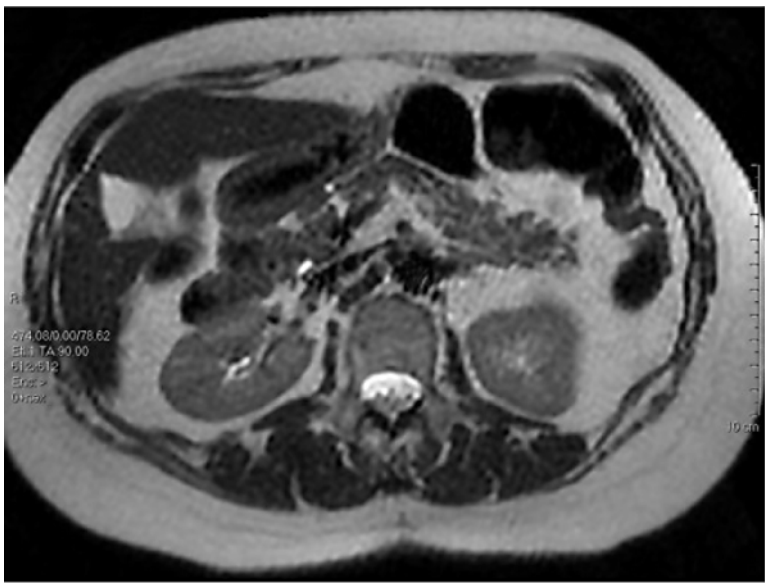
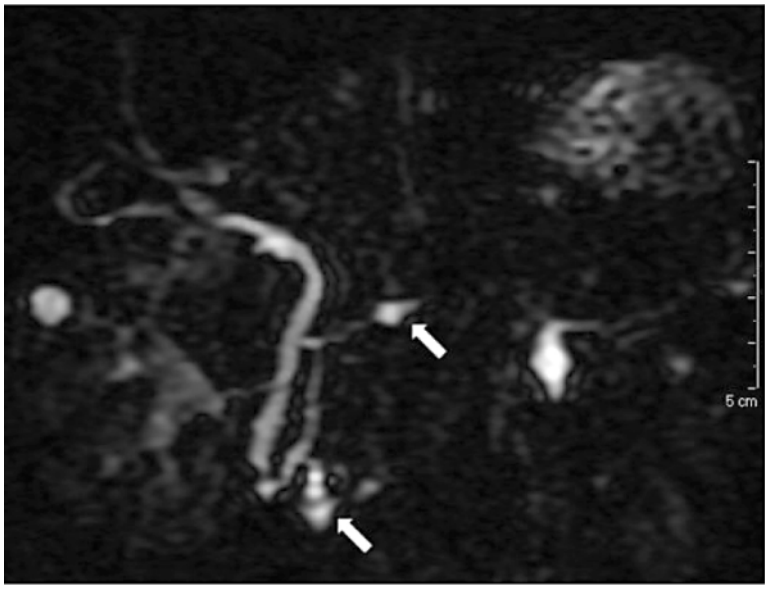


Fig. 4. Magnetic resonance cholangio-Wirsungpancreatography showing branch-type intrapapillary mucinous tumors localized in the head and in the body of the pancreas (arrows).



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