



# Autoimmune pancreatitis or pancreatic cancer? A dilemma in a pregnant woman

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## Autoimmune pancreatitis or pancreatic cancer? A dilemma in a pregnant woman

**INTRODUCTION:** Autoimmune pancreatitis is now a defined entity and it could mimic a pancreatic malignancy. True oncological emergencies in pregnant patients are rare.

**CASE REPORT:** A 39 years-old pregnant woman was admitted to our emergency unit due to right upper quadrant abdominal pain and evidence of obstructive jaundice. Since computed tomography-scan and endoscopic retrograde cholangiopancreatography are contraindicated in pregnant woman, a cholangio-Nuclear Magnetic Resonance was performed, confirming the biliary tract dilatation with stenosis of the intrapancreatic portion of the common bile duct and a shaded image of a mass in the pancreatic head. An endoscopic ultrasound with fine needle aspiration biopsy were performed. US-guided external percutaneous trans-hepatic biliary drainage was successfully performed. The cytological examination showed the presence of erythrocytes, granulocytes, histiocytes and rare lymphocytes; a diagnosis of AIP was supposed, and steroid therapy with methylprednisolone was started. Laboratory tests and jaundice were normalized within 15 days, and the fetus was born in very good health, 22 weeks after. The follow-up was uneventful and a CT-scan confirmed the complete normalization of the pancreatic gland, 12 months after hospital discharge.

**CONCLUSION:** Autoimmune pancreatitis should be taken into account in the differential diagnosis of a not well defined pancreatic mass; in the event of pancreatic mass-forming disease in pregnancy, the differential diagnosis should be early and accurate, because destructive surgery involves an high rate of morbidity and may interrupt pregnancy. A US-guided FNAB and the response to the corticosteroid therapy should lead to a correct diagnosis.

**KEY WORD:** Autoimmune pancreatitis, Pancreatitis, Pancreatic cancer, Pregnancy

## Introduction

Autoimmune pancreatitis (AIP) was first described by Yoshida <sup>1</sup> in 1995; it is a rare but fascinating type of chronic pancreatitis <sup>2</sup>, showing an increasing incidence

resulting from the improvement of diagnosis by immunological markers and pancreatic biopsy. Patients with AIP are usually elderly males, rarely complaining of the severe abdominal pain of typical pancreatitis, and usually presenting jaundice <sup>3</sup> and sometimes weight loss <sup>4</sup>.

On radiograms AIP could appear as a pancreatic mass mimicking a pancreatic cancer (PC), potentially leading to abusive pancreatic resection for a benign symptomatic disease. True oncological emergencies in pregnant patients are rare (except for leukaemia), and time is required to deliberate and to go on with a personalised treatment plan that the patient will view as clear and balanced <sup>5</sup>.

We report a case of a difficult differential diagnosis between AIP and PC in a 39 years-old pregnant woman.

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## Case Report

A 39-years-old woman at 14th week of pregnancy was admitted to our emergency Academic Department because she complained of mild abdominal pain, nausea, and signs of obstructive jaundice. She was a heavy smoker (more than 30 cigarettes *per day*) and she underwent total thyroidectomy for *Hashimoto* disease five years earlier because of multiple suspected nodules. All laboratory examinations, including serum level of amylase and lipase, were normal except for hypocalcaemia (7 mg/dl), high values of CA 19.9 (109.3 U/mL; normal range: < 40 U/ml), and total bilirubine (13.5 mg/dl); moreover, subclasses of serum circulating Immunoglobulins (Ig-G) and antibodies of autoimmune diseases were normal. An emergency abdominal US showed a marked dilatation of the gallbladder, and of the intrahepatic and extrahepatic biliary tract, without evidence of calculi, and an enlarged and dishomogeneous pancreas gland, especially at the head, where a hypoechogenic mass measuring 22 x 29 mm of diameter was evident. Since CT-scan and endoscopic retrograde cholangiopancreatography (ERCP) were contraindicated due to the too high x-ray dose to be used and its danger for conceptus, a cholangio-NMR (c-NMR) was performed; it confirmed the intra- and-extrahepatic biliary tract dilatation observed at US showing a stenosis of the intrapancreatic portion of the common bile duct. Furthermore we noted an increased pancreas volume with a shaded image of a mass in the head but without evidence of peripancreatic vascular vessels infiltration by the pancreatic mass (Fig. 1, 2) and with a normal main pancreatic duct. An endoscopic ultrasound (EUS) with a fine needle aspiration biopsy (FNAB) was performed, confirming the pancreatic head enlargement.

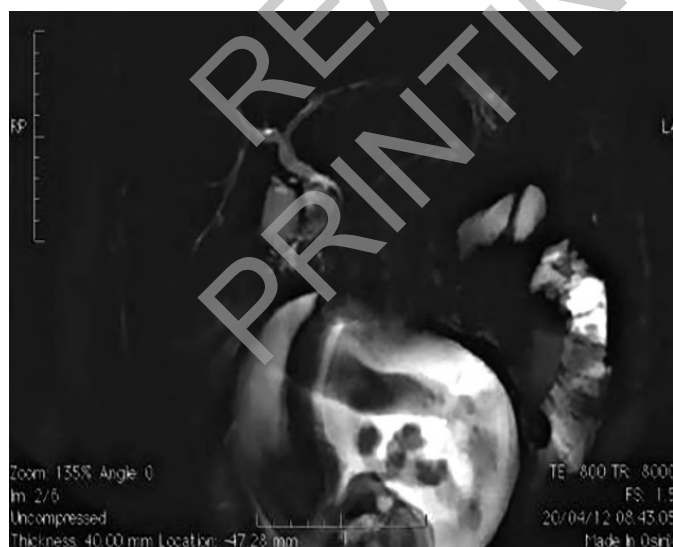


Fig. 1: MRI findings: stricture of the main bile duct, gallbladder, intrahepatic and extrahepatic biliary ducts dilatation; in the lower part of the picture, the fetus appears.

Then, a US-guided external percutaneous transhepatic biliary drainage was successfully performed to improve general conditions, and to reduce the risk of fetus damage due to high bilirubine levels. The cytological examination of the aspirated material showed the presence of erythrocytes, granulocytes, histiocytes and rare lymphocytes and a dense fibrosis.

On the basis of this, a diagnosis of AIP was supposed, and a steroid therapy by an initial dose of 0.6 mg/kg/day of *metilprednisolone* was administrated, gradually tapering to a maintenance dose of 5 mg/day for 6 months, during which a clinical, biochemical, and imaging follow-up was performed.

Laboratory tests and jaundice were normalized within 15 days, and the fetus was born in very good health, 22 weeks after. The follow-up was uneventful and a CT-scan confirmed the complete normalization of the pancreatic gland, 12 months after hospital discharge.

## Discussion

AIP has today become a defined entity, described in reports from Asia, Europe and the United States as a chronic fibro-inflammatory disease of the pancreas, usu-



Fig. 2: MRI findings: stricture of the main bile duct, gallbladder, intrahepatic and extrahepatic biliary ducts dilatation, the pancreatic gland enlarged and dishomogeneous, especially on the head

ally observed in elderly people <sup>6</sup>. It can be classified as type 1 or type 2, based on pathological findings: type 1 is designated as a lymphoplasmacytic sclerosing pancreatitis, and type 2 as an idiopathic duct-centric chronic pancreatitis (IDCP) or AIP with granulocytic epithelial lesion (GEL) <sup>7</sup>.

The most common findings in AIP include mild abdominal symptoms, diffuse or focal enlargement of the pancreas, fluctuating obstructive jaundice and elevated serum of IgG4 levels <sup>8</sup>. It should be considered part of a systemic disease, because of the frequent involvement of extrapancreatic organs. These include fibro-inflammatory process of the bile duct, the salivary and lacrimal glands, the retroperitoneum, the lymph nodes and more rarely, as in this reported case, the thyroid gland with hypothyroidism requiring thyroxin supplementation <sup>9,10</sup>. A diffuse enlargement and effacement of the lobular contour of the pancreas, (so-called "sausage-like") at CT scan is indicative of AIP, and it is rarely observed in PC <sup>8</sup>. However, in patients in whom CT-scan or ERCP are not recommended like in pregnancy, a c-NMR is mandatory. Moreover, as a diagnosis should not be performed using imaging alone <sup>11</sup>, when an invasive biopsy could be at risk, EUS-FNAB represents the reasonable means to assess pancreatic masses showing a reported sensitivity for diagnosing PC from 80% to 90% <sup>12,13</sup>.

Immunological abnormalities include hypergammaglobulinaemia, elevated serum IgG4 levels, and the presence of autoantibodies. Indeed, a serum level of IgG4 more than 135 ng/dL has very high sensitivity and specificity in differentiating AIP from PC <sup>14</sup>, even if high Ig4 are evident in 5% of PC <sup>15</sup>. IgG4-negative AIP is besides a known entity, reported in literature in approximately 20% of AIP patients regarding GEL-AIP <sup>16</sup>. However, the association of antinuclear antibody (ANA), rheumatoid factor (RF) and IgG4 increase the sensitivity of diagnosis to 97% <sup>17</sup>. In this reported case, none of these immunological abnormalities was evident.

Histological findings in the pancreatic sample showed dense fibrosis and inflammatory appearance with intense lymphoplasmacytic infiltration <sup>18</sup>. However, AIP is the only pancreatic disorder responsive to steroid treatment <sup>19</sup>.

Especially in the mass-forming type of AIP, surgical over-treatments are reported in literature <sup>20-22</sup>, and for this reason, the choice of treatment was the crucial problem in the management of this reported case. Indeed, demolitive surgery like pancreaticoduodenectomy (PD) is the only chance to obtain a certain diagnosis but, also in high volume centres, it is still associated to a high post-operative morbidity ranging from 30% to 50% <sup>23,24</sup>. Starting from this assumption, up to 27% of PD performed for suspected pancreatic adenocarcinoma still shows a diagnosis of AIP <sup>25,26</sup>.

PC infrequently occurs in pregnant and childbearing women with only ten cases reported in literature <sup>27</sup>. However, when this evenience occurs, disease stage and gestational age are the most important factors deter-

mining management <sup>28</sup> and the preferred time for surgery during pregnancy is the second trimester <sup>29</sup>, being the risk of spontaneous abortion lowest <sup>30-33</sup>.

This seem to be the first case of AIP mimicking a PC occurred during a pregnancy, stressing the importance of a US-guide FNAB and of the response to the corticosteroid therapy to steer the management of this critical dilemma.

## Riassunto

**INTRODUZIONE:** La pancreatite autoimmune è attualmente considerata una patologia ben definita ma che può mimare un carcinoma pancreatico. Le reali emergenze oncologiche nella gravida sono però rare.

**CASI CLINICI:** Una donna di 39 anni gravida giunge alla nostra osservazione per un dolore all'ipocondrio destro associato ad ittero ostruttivo franco. Stante la controindicazione ad eseguire una TAC ed una Colangio Pancreatografia Retrograda Endoscopica nella gravida, la paziente fu avviata all'esecuzione di una colangio-Risonanza Magnetica che confermò la dilatazione delle vie biliari intra ed extra-epatiche per effetto di una stenosi della Via Biliare Principale nel tratto intra-pancreatico associata ad un ispessimento parenchimale della testa del pancreas simulante una massa neoformata. La paziente fu sottoposta all'esecuzione di una eco-endoscopia pancreatica trans-duodenale con agobiopsia e le fu posizionato un drenaggio biliare percutaneo transepatico. L'esame citologico dimostrò la presenza di eritrociti, granulociti, istiociti e rari linfociti; pertanto fu posto il sospetto diagnostico di pancreatite acuta autoimmune ed iniziata una terapia con metilprednisolone. Gli esami sierologici e l'ittero si normalizzarono entro 15 giorni e la paziente partorì 22 settimane dopo un neonato in buone condizioni di salute. Nel follow-up non sono stati registrati eventi ed una TAC eseguita 12 mesi dopo la dimissione ha dimostrato il recupero completo della ghiandola pancreatica.

**CONCLUSIONI:** La pancreatite autoimmune deve essere tenuta in conto nella diagnosi differenziale delle lesioni pancreatiche non ben definite: nell'eventualità della comparsa di una massa pancreatica in corso di gravidanza, la diagnosi differenziale deve essere precoce ed accurata in quanto la chirurgia demolitiva potrebbe rivelarsi fatale per il feto e con un alto tasso di morbilità. La biopsia con ago sottile in corso di eco-endoscopia e la terapia con steroidi possono aiutare la diagnosi differenziale.

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