Annals of Medicine and Surgery 8 (2016) 14–17

Contents lists available at ScienceDirect

Annals of Medicine and Surgery

journal homepage: www.annalsjournal.com

Case report

Emergency surgical treatment of complicated acute pancreatitis after kidney transplantation with acute rejection: Case report and literature review

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HIGHLIGHTS

- Acute pancreatitis is a rare but frequently fatal complication and challenging therapeutical situation in patients following kidney transplantation.
- Several etiological agents are listed, which also include the effect of immunosuppressive medication.
- Patient care requires reduction of immunosuppressive medication and very close co-operation between the surgeon, nephrologist, intensivist and anaesthetist.

ARTICLE INFO

Article history:
Received 10 December 2015
Received in revised form
20 April 2016
Accepted 23 April 2016

Keywords:
Acute pancreatitis
Renal transplantation
Immunosuppressant therapy

ABSTRACT

Introduction: Acute pancreatitis is a rare but frequently fatal complication in patients following kidney transplantation. The first case of acute pancreatitis in patients following a kidney transplant was described by Starzl in 1964. The incidence of acute pancreatitis is stated at between 1 and 5%. The mortality rate amongst these patients reaches as high as 50–100%.

Presentation of case: Here we present a case of acute pancreatic abscess in a caucasian female – shortly following a kidney transplant complicated by the development of acute rejection, in which immunosuppressant therapy is a potential etiological agent. Emergency surgical treatment was indicated, which included drainage of the abscesses irrigation of the abdominal cavity. Immunosuppressive medication was considered a possible etiological factor, and as a result administration of tacrolimus and mycophenolate mofetil was discontinued. This was successful and three months later, diagnostic rebiopsy of the graft was performed without signs of rejection.

Discussion: The etiology of this illness is multifactorial. The clinical manifestation of acute pancreatitis in patients following kidney transplantation is the same as in the remainder of the population. However, in patients following transplantation with long-term immunosuppression, it usually manifests a more rapid development and a more severe, frequently fatal course.

Conclusions: With regard to the patient's comorbidities, early surgical therapy was indicated – drainage and closed lavage and immunosuppressive medication as a suspected tobe ethiological factor was discontinued. This course of treatment led to a complete recovery with preservation of good function of the cadaverous kidney.

1. Introduction

Acute pancreatitis is a rare but frequently fatal complication in patients following kidney transplantation. The first case of acute pancreatitis in patients following a kidney transplant was described

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http://dx.doi.org/10.1016/j.amsu.2016.04.022

by Starzl in 1964 [1]. Several etiological agents are listed, which also include the effect of immunosuppressive medication. Here we present a case of acute pancreatic abscess in a patient shortly following a kidney transplant complicated by the development of acute rejection, in which immunosuppressive therapy is a potential etiological agent, as well as a review of the literature listening the potential etiological agents and management of therapy of acute pancreatitis in patients following kidney transplantation.

2. Presentation of case

A 67 year old caucasian female, underwent renal transplantation from a deceased donor due to chronic renal failure based on the biopsy of unconfirmed chronic glomerulonephritis. Immunosuppression consisted of 2 doses of basiliximab and standard dosages of tacrolimus, mycophenolate mofetil and prednisolone. After the operation, there was a late onset of graft function and the patient was haemodialysis dependent. A biopsy performed 7 days after transplantation confirmed severe combined acute cellular (2B according to Banff 2007 classification) and antibody mediated C4d positive rejection, which was treated intravenously with rabbit antithymocyte globulin (700 mg in 7 doses á 100 mg) in parallel with plasmapheresis [7] and intravenous immunoglobulins (total dose 75 mg). This treatment was successful, with recovery the graft function. At the same time, clinically asymptomatic elevation of amylase and lipase was registered, probably in connection with the combination of pharmaceuticals. No pathology of the pancreas was observed upon ultrasound examination. A solitary stone was found inside the gall bladder, but the bile ducts were not dilated. The patient was treated by conservative therapy. The dose of mycophenolate mofetil was reduced in view of its possible role in inducing pancreatic irritation [6,8–11] and in order to prevent deterioration of the patient's condition due to infection. Corticosteroids were not discontinued given that the patient had been taking them for a long time and had developed corticosteroid-dependence.

Three months after the renal transplant, the female was admitted to the surgery clinic presenting with progressive sharp pain throughout the entire abdominal region persisting for three days, with temperatures exceeding 39 C and shivering. At the time of admission, immunosuppressive treatment consisted of tacrolimus (Advagraf, 5 mg o.p.d.), mycophenolate mofetil (Mycophenolate mofetil- SANDOZ, 500 mg b.i.d), prednisolone (Prednison, 20 mg o.p.d.).

The initial laboratory results were characterised by a significantly increased level of serum amylase (4.25 μkat/l) and lipase (1.55 μkat/l); bilirubin, ALT, AST, ALP and GGT were within the norm. The level of potassium was 5.3 mmol/l, creatinine 384 μmol/l and urea 21.9 mmol/l. Inflammatory parameters were extremely elevated – leukocytes 14.48 $\times$ 10^9/l, CRP 433 mg/l, procalcitonin 40 μg/l. The serum levels of calcium and parathyroid hormones were within the normal range. Acute infections were serologically excluded – CMV, Epstein-Barr virus, herpes simplex, varicella zoster virus and acute hepatitis. Acute contrast-enhanced CT scan (CECT) [Fig. 1,2] described acute pancreatitis with an unfocussed image of the contours of the body and tail of the pancreas, and multiple subphrenic abscess collections to the right and left, with a maximum of collection in the bursa omentalis, as well as fluid between the loops of the small intestine (see Figs. 3 and 4).

Objective manifestations of peritonism, elevated inflammatory parameters, septic temperatures and the CECT image of pancreatic abscess were decisive in indicating surgical treatment. The surgical procedure consisted of transverse laparotomy, drainage of the abscess subphrenically on the left and right, sample collection for cultivation, severance of ligamentum gastrocolicum with opening of bursa omentalis and drainage of abscess and irrigation of the abdominal cavity and four quadrants drainage.

Immunosuppressive medication was also considered as a possible etiological factor, and as a result administration of tacrolimus and mycophenolate mofetil was discontinued. Only corticoids were administered intravenously. The cultivation of the abscesses of the abdominal cavity demonstrated Escherichia coli. A combination of meropenem + metronidazole was administered. Progressive increase in azotemia and manifestations of graft failure, which required continual CVVHD were observed. On the sixth postoperative day, the patient's condition was sufficiently stabilised to allow extubation, and support of vasopressors was no longer required. Spontaneous diuresis was renewed. Follow-up CECT scan 9 days after the surgical revision revealed [Fig. 2.] only a residue following evacuation of the pancreas, without progression of inflammatory changes in the pancreas and peripancreatic fat saturation with streaks of fluid. There was significant regression of the inflammatory parameters and stabilisation of laboratory values. On the third postoperative day, immunosuppressive therapy with tacrolimus was renewed. The dose of corticoids was progressively reduced. 14 days after surgical revision the patient was back on full sustenance, the surgical wound was locally bandaged with a VAC system and the patient was transferred to the nephrological department and subsequently discharged for home care.

Three months later, diagnostic rebiopsy of the graft was performed without signs of rejection. Up to the present time no other recurrence of acute pancreatitis has been registered. Immunosuppressive medication consisted of tacrolimus and prednisolone (Prednison 5 mg/day), and graft function is very good.

3. Discussion

Acute pancreatitis is a potentially fatal illness. It is described in 1–5% of patients following a kidney transplant [2–4]. The cause of the development of this illness is multifactorial. Acute pancreatitis is caused by disorders of the bile duct and alcoholism, additional obstructive factors include disorders of the duodenum (annular pancreas, periampullary polyps and intraluminal duodenal

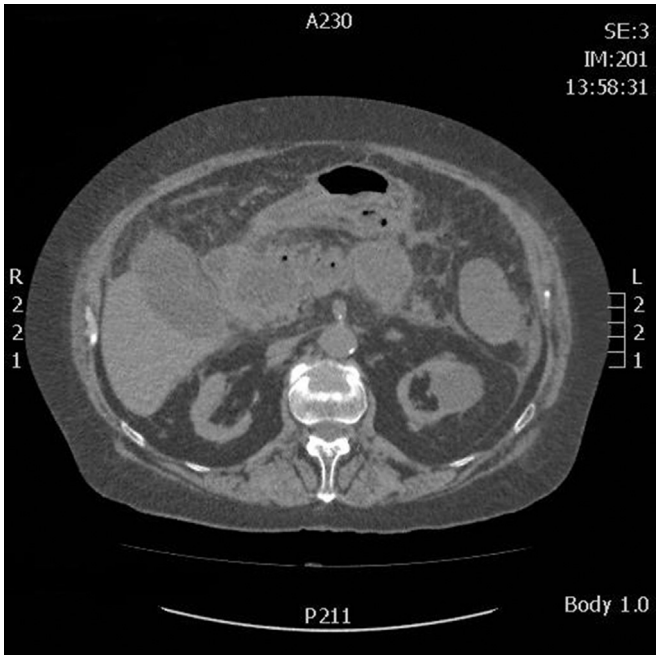

Fig. 1. Initial CECT scans.