Fatal Ischaemic Colitis in Renal Allograft Recipients

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Abstract
The occurrence of ischaemic colitis in two renal allograft recipients, 6 months and 2 years after transplantation, is reported. Both were on azathioprine and prednisolone and one of them had normal graft function when colitis occurred. The clinical presentation in both patients simulated inflammatory bowel disease and one of them also developed a toxic megacolon. The diagnosis was confirmed at autopsy in both cases.

Key words: Renal transplantation, ischaemic colitis, colonic complication, inflammatory bowel disease

Introduction
Serious colonic complications following renal transplantation occur in 3.5–11.5 per cent of patients and are associated with a high mortality rate.1,2 The complications reported include diverticulitis, pseudomembranous colitis, ischaemic bowel disease, acute colitis, cytomegalovirus colitis and colonic perforations.3 We report two patients who developed ischaemic bowel disease after renal transplantation.

Case Reports
Case 1: HS, a 28-year-old male with chronic renal failure due to chronic glomerulonephritis, received a renal allograft from a related donor. He was treated for suspected tuberculosis 2 years later when he had fever and weight loss of 5 kg over six months. He was re-admitted with a history of loose stools of 6 months' duration. Stools were 20 to 30 per day and mixed with blood and mucus. He was anaemic and cachectic. Abdominal examination showed tenderness and guarding. Signoroscopes revealed a friable mucosa but no ulcers or pseudomembranes. Stool examination did not show any parasites or cysts. Stool culture grew Candida albicans. Serum creatinine was 1.4 mg/dl and urine output remained normal. He was given intravenous fluids and metronidazole 400 mg 8 hourly, but had no relief. Seizure prophylaxis 3 g per day and prednisolone enemas were then given on the suspicion of inflammatory bowel disease. However, his loose motions persisted. Ten days after hospitalization he developed fever with severe diffuse abdominal pain. Abdominal percutaneous yielded thick cloudy fluid with plenty of pus. He died the same night.

Pathology: There was 300 ml of pus in the peritoneal cavity. Involved segments of the large bowel showed fibrotic thickening and shortening with reduction in the transverse diameter. There was diffuse inflammation in mesenteric fat. No perforation was seen. There was flattening of the mucosa with patchy, superficial, linear ulcerations involving the rectum, sigmoid colon, colonic flexure and transverse colon. Involved mucosa showed marked edema, giving a cobblestone appearance (Fig 1). The cecum and ascending colon showed only patchy mucosal congestion. Microscopy showed full thickness loss of mucosa. The submucosa was markedly widened and filled with granulation tissue composed of fibroblasts, numerous vascular channels, inflammatory cells and Areas of pseudolymphoid microphages, confirming the diagnosis of ischaemic colitis. No viral inclusions or fungi were demonstrated. The transplanted kidney showed no significant pathology except for mild interstitial edema.

Case 2: JS, a 24-year-old male, underwent an uneventful renal transplantation from a related donor and was maintained on prednisolone and azathioprine. A month after transplantation, he had an episode of acute rejection which responded to steroid therapy. Three months later he developed features of chronic rejection. Following a second renal transplantation from a related donor he had transient post-operative anuria and sepsis which responded to treatment. At the time of discharge from the hospital, he had a serum creatinine of 1 mg/dl. Four months after the second transplant, he developed urinary tract infection due to Escherichia coli and was adequately treated. Thereafter his serum creatinine rose to 3.6 mg/dl and he was given anti-rejection therapy. A month later, he started having 8 to 10 loose stools with blood and mucus associated with mild abdominal pain and vomiting. There was no fever or oliguria.

Physical examination revealed dehydration, with no abdominal tenderness or distension. Signoroscopes revealed a friable, edematous mucosa with loss of vascular pattern and pinhead ulcers. Stool culture yielded Candida albicans. He was given cotrimoxazole, metronidazole, niacin and intravenous fluids. His diarrhea continued with a frequency of more than 20 stools per day and he developed abdominal distension 2 days later. On the sixth day the distension increased markedly and toxic megacolon was suspected. Since his serum creatinine was now 8 mg/dl and he was septic, he received one session of hemodialysis in preparation for colostomy but expired before this could be done.

Pathology: At autopsy there was marked dilatation of the transverse colon with thinning of the wall and congestion. There was no perforation. The lumen of the large bowel and distal portion of the terminal ileum contained fresh blood and blood clots. There were extensive mucosal ulcerations, inflammatory polyph due to undermining of the mucosa and formation of mucosal tags (Fig 2). The lesions maximally involved the cecum, ascending/transverse colon and splenic flexure. Distally the ulcers were more discrete and superficial. Microscopy showed extensive necrosis of the mucosa with replacement by acute inflammatory cells, fibrin, red blood cells and bacterial colonies. There was marked submucosal hemorrhage and edema. Submucosal blood
vessels showed fibrinoid necrosis with fibrin thrombi within their lamina. The muscular coat was thinned out and showed degenerative changes. No fungal or viral inclusions were seen. The features were consistent with ischemic colitis. Both the grafted kidneys showed features of chronic rejection.

Discussion

Of the colitic complications in renal transplant recipients, the two common ones are ischemic colitis and pseudomembranous colitis. In a recent report, one third of all colonic complications in renal transplant recipients was constituted by ischemic colitis, and this condition simulated inflammatory bowel disease both clinically and morphologically. In our Case 1, the gross appearance of the colon resembled that seen in Crohn’s disease, while the presentation in Case 2 suggested fulminant colitis. Histology suggested ischemic bowel disease in both cases.

The etiologic mechanisms implicated in the development of ischemic colitis in these patients include uremia, blood redistribution, immunosuppressive and antibiotic therapy, irradiation, and retroperitoneal surgery with ligation of the collateral arterial supply to the colon. Patients undergoing a second transplant, which compromises colonic collaterals via the hypogastric arteries bilaterally, are at a greater risk. The ischemic bowel disease seen in these patients is of the non-occlusive variety. However, fibrinoid necrosis or thrombosis of the submucosal and subserosal vessels may be seen.

Colonic complications after renal transplantation are associated with a high mortality. The final diagnosis was made post-mortem in both our cases. In renal allograft recipients with colonic symptoms, a high index of suspicion and vigorous management should be the rule.

References


BOOK REVIEW

Chronic Pancreatitis in India. V Balakrishnan, Ed. Indian Society of Pancreatology, Medical College, Trivandrum, 1987; 136 pages, Rs 100 (India), US $15 (Overseas).

Chronic Pancreatitis in India is the proceedings of the National Workshop on Chronic Pancreatitis held at Trivandrum on December 17, 1986 under the auspices of the Indian Society of Pancreatology. This was the first time in India that people interested in chronic pancreatitis came together to exchange experiences.

Some workers have not defined their criteria for the diagnosis of chronic pancreatitis; the data presented in fact lead one to presume that some of the cases were of acute pancreatitis.

As in Western countries, alcohol appears to be a significant causative factor of chronic pancreatitis in certain regions. Associated gall stones also occur. Pancreatic calcification with diabetes in the young (without any history of alcohol consumption) is common in South India. The cause of this ‘tropical pancreatitis’ is probably multifactorial. Protein malnutrition is one of the suspected causative factors. Cassava intake with cyanide poisoning has also been blamed. However, chronic pancreatitis with diabetes, or ‘fibrocalcific pancreatic diabetes’ (FCDP), is also prevalent in Orissa where cassava is not consumed.

The outcome of this conference is the realisation for the need of a common proforma to study chronic pancreatitis in India. We also require to define the terms ‘alcoholism’, ‘protein malnutrition’, ‘cyanide poisoning’, etc. Since so little is known of this disease we are now waiting to learn more by organised, prospective studies. As a result of this first conference, chronic pancreatitis will be jointly studied by clinicians, gastroenterologists, diabetologists, pathologists, radiologists and surgeons and hopefully also by spectrometerists, crystallographers and epidemiologists.

This book is indispensable to all students of pancreatic disease, whether in India or abroad.

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