

confirmed that they all had symptomatic ascites and inferior vena cava stenosis. Before stenting, the mean pressure gradient across the stenosis was 14.5 mmHg; after stenting, this reduced significantly to 2.8 mmHg. After a mean follow-up of 12.2 months, five of the seven patients were found to have maintained the clinical improvement that became apparent shortly after the procedure. All reported fewer symptoms, had lowered diuretic requirements and needed less-frequent intervention to remove ascites. The authors conclude that inferior vena cava stenting is safe and effective and should be considered as a first-line intervention in PLD patients who have intractable ascites.

**Original article** Grams J *et al.* (2007) Inferior vena cava stenting: a safe and effective treatment for intractable ascites in patients with polycystic liver disease. *J Gastrointest Surg* 11: 985–990

## New method of pancreatic stump closure reduces postoperative fluid leakage in pigs

The relatively high incidence (approximately 20–30%) of complications caused by leakage after pancreatic resection has led to the development of several surgical approaches that aim to reduce this occurrence. Truty and colleagues studied whether saline-coupled radiofrequency ablation, a new method of stump closure, reduces postoperative leakage after distal pancreatectomy in pigs.

The authors performed surgery in 40 domestic pigs. After removing about 8 cm of the distal pancreas, the remaining stump was closed with either a traditional oversew (control group,  $n=20$ ) or saline-coupled radiofrequency ablation with a TissueLink DS3.5C™ device (TissueLink Medical Inc., Dover, NH; treatment group,  $n=20$ ). A drainage tube allowed pancreatic leakage fluid to be monitored for amylase levels during the first 10 days postoperatively.

In total, 37 animals completed their allocated postoperative period before killing (for histopathological examination) at either 3 or 5 weeks; one died intraoperatively, and two were killed after just 1 week for early examination. The rate of pancreatic leakage and subsequent complications was significantly higher in the control group than the treatment group (42% versus 5.5%,  $P=0.01$ ). Biochemical leakage (defined as a drain amylase level >3 times the serum amylase level) was observed in nearly all

control animals for the first 10 postoperative days, whereas almost all pigs in the treatment group had no biochemical leakage after day 3.

The authors conclude that this new method of pancreatic closure reduces postoperative complications secondary to leakage, and recommend that saline-coupled radiofrequency ablation is studied in a human trial.

**Original article** Truty MJ *et al.* (2007) Decreasing pancreatic leak after distal pancreatectomy: saline-coupled radiofrequency ablation in a porcine model. *J Gastrointest Surg* 11: 998–1007

## Noninvasive screening for intestinal allograft rejection

Intestinal failure can be treated successfully by intestinal transplantation if subsequent rejection is avoided. Additional immunosuppression can control mild rejection and prevent complete loss of the graft, which is fatal in more than 50% of patients. Such treatment must be started immediately but diagnosis is difficult. One of the first clinical signs of rejection is diarrhea, but this can also be caused by infectious enteritis or a reaction against drugs or food. As no noninvasive test is currently available, patients presenting with diarrhea must undergo an endoscopic biopsy through a temporary ileostomy, a procedure that can cause serious complications.

It has been proposed that calprotectin levels in stool samples can indicate shedding of intestinal epithelial cells. This intracellular protein is released mainly as a result of cell disruption or death; therefore, Sudan *et al.* investigated whether calprotectin levels in the *succus entericus* from intestinal transplant recipients correlated with the onset of early acute rejection.

Calprotectin levels were measured in four groups of patients: 12 with histologic evidence of acute rejection; 5 with viral enteritis; 16 with nonspecific inflammation and 35 with normal allograft histology. Calprotectin levels were significantly higher in patients experiencing rejection and, in two patients, elevated calprotectin levels appeared 6–18 days before histologically detectable signs of rejection. The authors suggest that stool calprotectin levels could be used as the basis of a screening test to enable some patients to avoid unnecessary invasive endoscopy.

**Original article** Sudan S *et al.* (2007) Calprotectin: a novel noninvasive marker for intestinal allograft monitoring. *Ann Surg* 246: 311–315