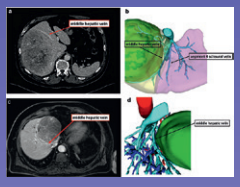
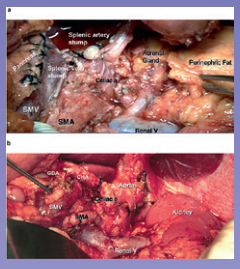
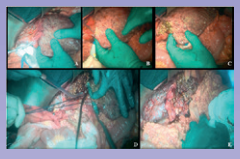
Highlights in this issue



Felli *et al.*, p. 297



Davis *et al.*, p. 312



Laroche *et al.*, p. 385

Time to use technology to move beyond the sole concept of minimally invasive surgery

I was an intern when laparoscopic cholecystectomy began to become a popular approach. I watched surgeons struggle with learning curves and saw some pretty ugly operations. Eventually surgeons learned and it became routine. Patients went home sooner and seemed to recover a little faster – albeit at the cost of slightly higher rates of common bile duct injury. We learned that big incisions were not necessary for every case. In fact, a couple of randomized trials in the early 90s demonstrated that there was not much difference between a laparoscopic and an open 'mini laparotomy' cholecystectomy. After that, minimally invasive surgery (MIS) took off and over the last few decades has expanded into technically challenging operations on the liver and pancreas. I have watched publication after publication document that MIS is associated with a relatively shorter recovery and similar complications rates. I have watched publication after publication conclude that 'in well selected patients' MIS is safe, equivalent to open surgery and reasonable. In this edition of *HPB* we see that MIS liver resections for intrahepatic cholangiocarcinoma and gallbladder cancer performed at the Mayo Clinic are safe and generally associated with some small short term recovery benefits with no compromise in surgical quality. There is also a review of the NCDB on robotic pancreatoduodenectomy which demonstrates similar perioperative outcomes to open surgery (except for a higher readmission with the robotic approach) and cancer outcomes. Both studies appropriately acknowledge the very powerful effect of selection bias. Surgeons are very good at knowing what they can get away with in an operation and using MIS is no exception. It is quite clear, that well trained and talented surgeons can use minimally invasive technology to do difficult operations. Selection is key and well acknowledged. We must admit, however, that the benefits, while real, are pretty small. Here is where I struggle with surgical technology. When feasible, it is inherently logical that doing an operation through a smaller incision can help a patient in many ways but focusing on the incision alone is woefully limited. What are the real issues with liver and pancreatic surgery? Well, after doing these operation for over 20 years it's pretty obvious to me. Infection, anastomotic leaks/fistulas, bleeding, injury to critical structures and liver failure are the issues that are truly threatening. MIS does not address these issues. If had to pick between a technology that eliminated pancreatic fistulas and one that eliminated abdominal wall trauma I would certainly pick the former. Although it is slowly happening, we must start studying and developing technology to make operations safer, easier and focused on the issues that can really hurt our patients. Cars can now park themselves and stop you when you're about to run over something. We have amazing technology that can theoretically do many things – warn you of proximity to critical structures, overlay imaging in real time, tell us about functional liver volume, assess perfusion of tissues and maybe even optimize anastomoses. We should be able to harness technology to see better, predict organ function, prevent injuries and improve our ability to get two lumens to heal together. Avoiding big incisions has been a step forward, but it's about time we use technology to focus on the big things.

Michael D'Angelica