Usage of polyethylene glycolic acid felt with fibrin sealant to prevent postoperative pancreatic fistula in pancreatic surgery.

Authors: Ochiai T., Soga K., Inoue K., Ikoma H., SonoyamaT., Otsuji E.

Publication Date: 2010

Abstract:

The purpose of this non-randomized retrospective study was to report our new procedures using polyethylene glycolic acid (PGA) felt with fibrin sealant to prevent severe pancreatic fistula in patients undergoing pancreatic surgery. From 2000-2008, 54 and 63 patients underwent pancreaticoduodenectomy (PD) and distal pancreatectomy (DP), respectively. Of those patients, we applied PGA felt with fibrin sealant to 18 PD patients and 26 DP patients. In PD patients, the PGA felt was wrapped around the pancreatic suture site, while in DP patients the PGA felt was wrapped around the predictive division site. In PD, the pancreatic parenchyma was sutured penetratingly using straight needles with 4-0 monofilament non-absorbable threads through the PGA felt and the seromuscular layer of the jejunum. After anastomosis between the pancreatic main duct and the jejunal wall using 4 to 12 stitches with 6-0 monofilament absorbable threads, the previous 4-0 threads were tied and the pancreaticojejunostomy finished. In DP, we used staple devices that gave a staple line consisting of a triple row of closely placed staples. The pancreaticojejunostomy site in PD patients and the cut stump in DP patients were coated with fibrin sealant. We compared the occurrence rates for severe postoperative pancreatic fistula (POPF) that occurred after PD or DP both with and without our new procedures. Before introduction of our procedures, severe POPF developed in 14 of 36 PD patients (39%) and 10 of 37 DP patients (27%). By contrast, after introduction of our procedures the incidence of POPF was only one in both of 18 PD (6%) ($P = 0.016$) and 26 DP (4%) ($P = 0.017$) patients. In summary, our procedure using PGA felt with fibrin sealant may reduce the risk of severe POPF.