

Pancreatic Resections: Are There Preoperative Factors Related to a “Soft Pancreas” and Are They Useful in Predicting Pancreatic Fistulas?

**Giovanni Taffurelli, Claudio Ricci, Marielda D'Ambra, Salvatore Buscemi,
Francesco Monari, Carlo Alberto Pacilio, Raffaele Pezzilli, Nicola Antonacci,
Carlo Ingaldi, Riccardo Casadei, Francesco Minni**

Department of Medical and Surgical Sciences (DIMEC), University of Bologna,
S. Orsola-Malpighi Hospital. Bologna, Italy

Context Soft pancreatic parenchyma is the most widely recognized risk factor for pancreatic fistulas.

Objective To evaluate factors related to a “soft pancreas”. **Methods** Retrospective study of patients who underwent pancreaticoduodenectomy or left pancreatectomy. Factors considered were: sex, age, co-morbidities, body mass index, American Society of Anesthesiologists (ASA) score, characteristics of the pancreatic remnant and preoperative diagnosis. Principal endpoints were: to recognize preoperative factors related to a soft pancreatic remnant and to establish if they are useful in predicting a pancreatic fistula. **Results** Two hundred and eight patients were recorded. The pancreatic fistula rate was 29.3% and it was significantly related to the type of resection, the soft texture of the pancreatic remnant ($P=0.037$), a Wirsung duct diameter <3 mm and the preoperative diagnosis. The risk factors predicting a

soft pancreatic remnant, were BMI >24 kg/m² ($P=0.011$); a Wirsung duct size ≤ 3 ($P<0.001$) and patients with periaampullary diseases ($P<0.001$). Based on these three factors, we developed a risk score model that was validated by considering the pancreatic fistula rate. We noted that the overall and clinically relevant pancreatic fistula rate significantly increased with increasing score values ($P=0.002$ and $P=0.028$, respectively). Using a score cut-off value of 6 points, patients with a score <6 were considered to be at low risk; those with a score ≥ 6 were considered to be at high risk. **Conclusions** Body mass index >24 kg/m², Wirsung duct size <3 mm and preoperative diagnosis may be considered as preoperative factors related to a soft pancreas and they resulted useful in predicting the incidence of pancreatic fistulas.