Ductal adenocarcinoma is the most common malignant tumor of the pancreas. Despite great efforts in basic and clinical pancreatic cancer research, the prognosis remains poor with an overall 5-year survival rate of less than 5%. Complete surgical resection represents the only curative treatment option and 5-year survival rates of 20-25% can be achieved following curative resection and adjuvant chemotherapy. Although pancreatic surgery is considered one of the most technically demanding and challenging procedures, there has been constant progress in surgical techniques and advances in perioperative care with a modern interdisciplinary approach including anesthesiology, oncology, radiology and nursing. This has reduced morbidity and especially mortality rates in high-volume centers. Among extended resection procedures multivisceral and venous resections are technically feasible and should be considered if a complete tumor resection can be achieved. Multimodal regimens have shown promising results, however, only adjuvant chemotherapy is supported by solid evidence from randomized controlled trials.