Natural orifice transluminal endoscopic surgery (NOTES) is a surgical technique that has received considerable interest in recent years. Although minimal access surgery has increasingly replaced traditional open abdominal surgical approaches for a wide spectrum of indications, in pancreatic diseases its widespread use is limited to few indications because of the challenging and demanding nature of major pancreatic operations. Nonetheless, there have been attempts in animal models as well as in the clinical setting to perform diagnostic and resectional NOTES for pancreatic diseases. Here, we review and comment upon the available data regarding currently analyzed and performed pancreatic NOTES procedures. Potential indications for NOTES include peritoneoscopy, cyst drainage, and necrosectomy, palliative procedures such as gastroenterostomy, as well as resections such as distal pancreatectomy or enucleation. These procedures have already been shown to be technically feasible in several studies in animal models and a few clinical trials. In conclusion, NOTES is a rapidly developing concept/technique that could potentially become an integral part of the armamentarium dealing with surgical approaches to pancreatic diseases.