Endoscopic biliary drainage
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OUTLINE OF THESIS

The first report of cannulation of the Ampulla of Vater was by Mc Cune in 1968. Since then, with the development of new fibreoptic duodenoscopes, management of malignant biliary obstruction has greatly improved. This marked the onset of the era of endoscopic retrograde cholangiopancreatography (ERCP) as a major therapeutic modality in the management of hepato-biliary and pancreatic diseases. Nowadays, endoscopic biliary stent insertion has become the standard treatment in patients with obstructive jaundice due to irresectable malignancy.

The division of Gastroenterology and Hepatology of the Academic Medical Center of the University of Amsterdam has a long standing interest in therapeutic biliary and pancreatic endoscopy and is considered a major referral center for this indication. Huibregtse was one of the pioneers of ERCP and developed the so called Amsterdam type polyethylene stent in 1980 which is still regarded as the standard type plastic endoprosthesis. Over the years numerous scientific publications have been contributed to internationally peer reviewed journals.

Chapter one gives a detailed overview of endoscopic therapy in the palliation of pancreaticobiliary malignancies. Limited stent patency due to clogging remains the most important problem in biliary stent therapy. This leads to recurrent obstructive jaundice and/or cholangitis and requires repeat endoscopy for stent exchange. This thesis focuses on the efficacy of stent therapy in both malignant and benign biliary obstruction, ways to improve stent patency, and identification of mechanisms involved in stent clogging.

Our first aim was to investigate whether changing the stent material and/or design prolongs the patency of plastic stents in patients with a malignant biliary obstruction. For this, comparative randomized trials were performed using teflon as a new stent material (Chapter two), adding a hydrophilic polymer coating (Chapter three) and using a new stent design (Chapter four). We also investigated the efficacy of self-expandable metal stents in metastatic biliary obstruction (Chapter five).

Secondly, the efficacy of biliary stenting in benign disease was investigated. We retrospectively assessed the long-term success rate of polyethylene biliary stenting in a large group of patients with benign biliary strictures due to chronic pancreatitis (Chapter six). In a selected group of patients with chronic pancreatitis who failed plastic stent therapy and had a contraindication or refused surgery, the long-term success rate of a biliary self-expandable metal stent was retrospectively analyzed (Chapter seven).

Thirdly, we focussed on the mechanisms involved in biliary stent clogging. For this, we studied the surface characteristics of various types of biliary stents using scanning electron microscopy (Chapter eight). In the last chapter we investigated early events in biliary stent clogging and distribution of bacteria in unblocked biliary stent by confocal laser scanning and scanning electron microscopy (Chapter nine).

Finally, a summary of this thesis is given.