POSTER : 1764290

Radiology Department,
Norfolk and Norwich University Hospital,
Colney Lane, Norwich, NR4 7UY.
sarah.smith4@nnuh.nhs.uk

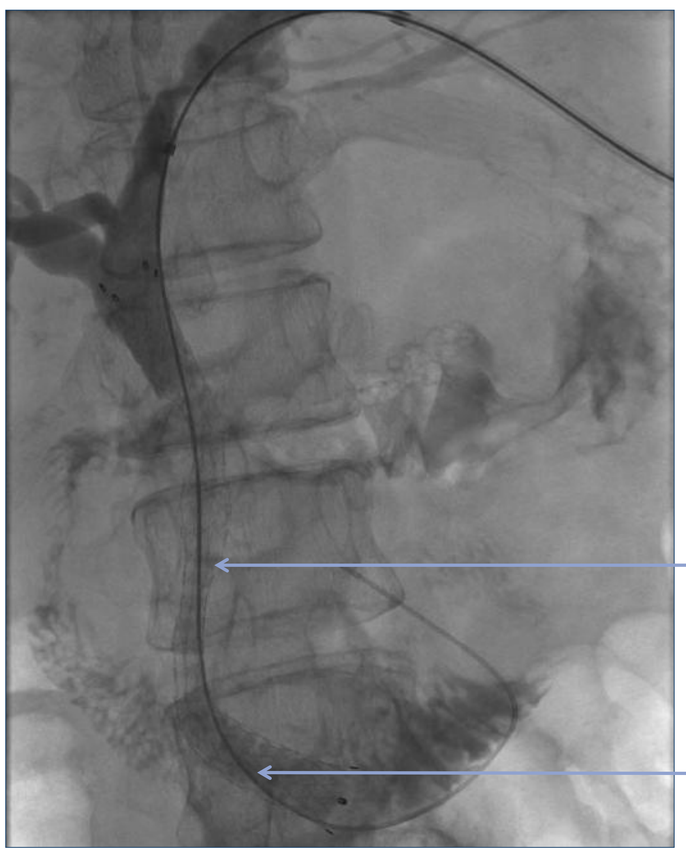
Norfolk and Norwich University Hospital
NHS Foundation Trust

An Audit Reviewing the Complications after Biliary Intervention

Smith SA and Crawford M.

Introduction

Biliary stents and drains can be inserted under fluoroscopic guidance to relieve biliary obstruction caused by both benign and malignant pathologies. Several complications are associated with biliary intervention. The British Society of Interventional Radiology published a biliary drainage and stent audit report representing data collected from a sample of 833 patients across 44 centres between November 2006 and August 2009. The major complications found were pain (15.2%), sepsis (11.2%), bleeding (6.1%) and renal failure (2.4%). The aim of our audit was to determine the complication rate after biliary drainage and stenting in Norfolk and Norwich University Hospital (NNUH) and compare it to this recently published data considering the BSIR's results as the standard.



Fluoroscopic image of a biliary stent insertion:
The left hepatic duct is punctured and canulated. Contrast is injected to outline the biliary tree and demarcate the level of obstruction. A guidewire is passed beyond this and a stent inserted.

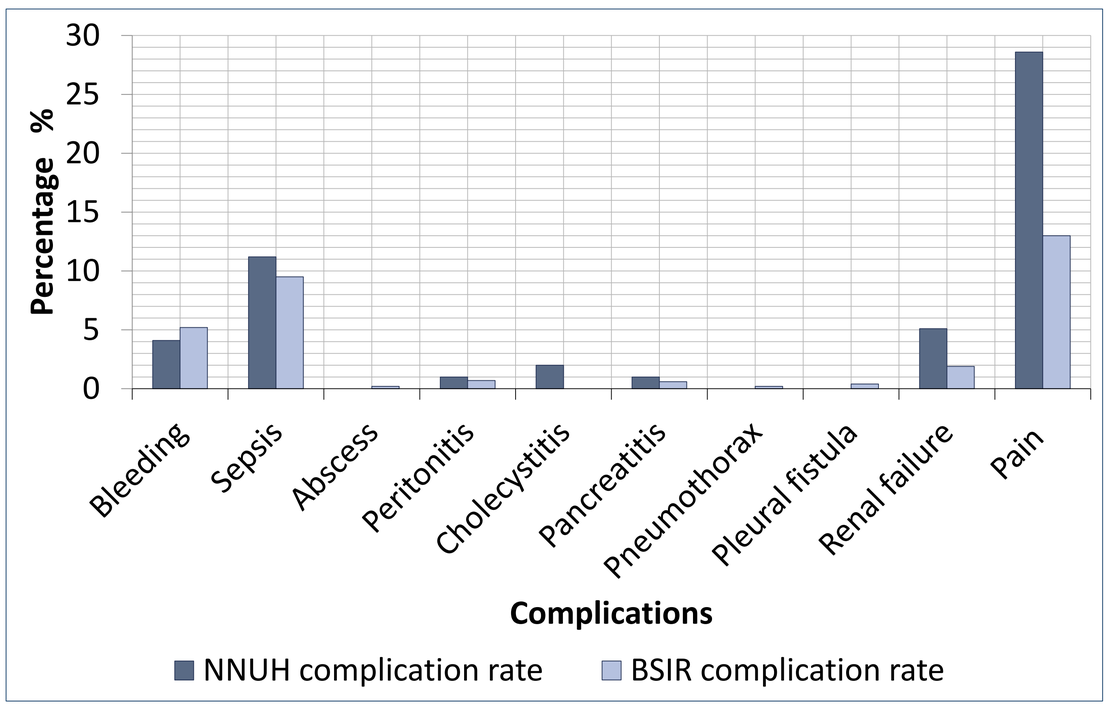
Expanded stent crossing the level of obstruction, in this case within the common bile duct.

Guidewire in biliary tree, passing into duodenum.

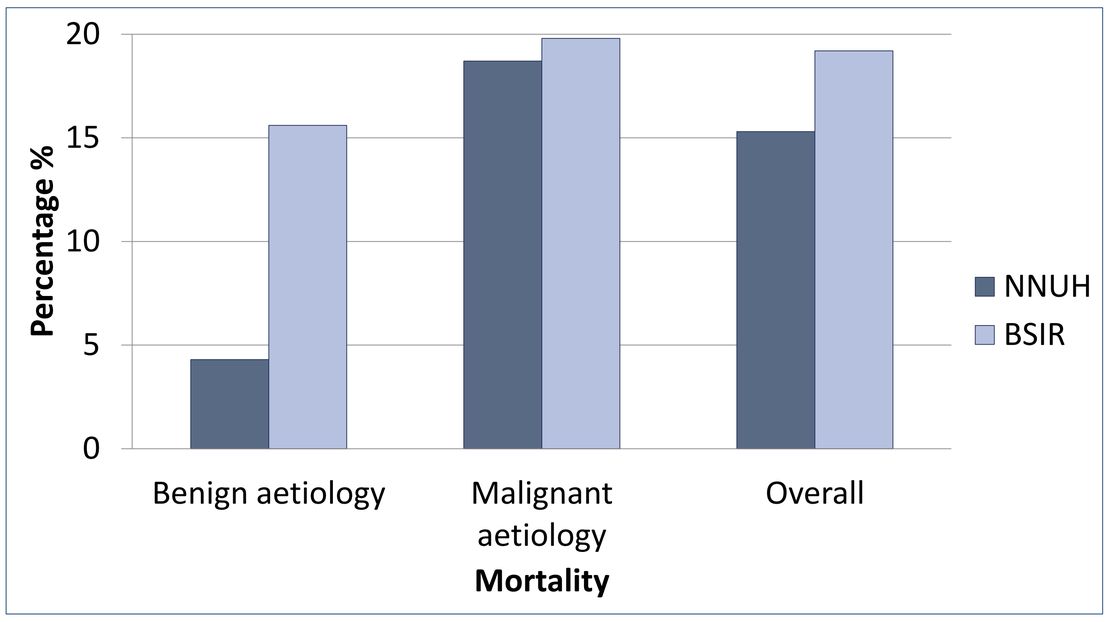
Method

The case notes of all patients who had biliary intervention between April 1st 2011 and May 4th 2012 were reviewed retrospectively to determine the complication and thirty day mortality rates. The results were compared against those from the BSIR multi-centre audit.

Results : Complication rates



Results : Thirty day mortality



Discussion

During the 13 months, 57 patients underwent 98 procedures including 38 stents and 60 drainages. Of these 57 patients, 10 had benign pathology and 47 had malignant pathology.

Overall, our main complications were similar to those seen in the BSIR registry (pain, bleeding, renal failure and sepsis). The rates for sepsis and bleeding were similar, however our complication rate for pain and renal failure were much higher than in the BSIR registry. This could be partially explained by our smaller sample size and different inclusion criteria between audits. We included those patients who had pain or drop in renal function within 4 days of the procedure but the BSIR may have included those who had pain and reduced renal function at discharge.

Pain is subjective and is difficult to quantify through retrospective case note review. Also patients with advanced cancer do have pain which may not be related to the biliary intervention.

All those who developed acute renal failure were correctable with intravenous fluids. These patients are more at risk from renal failure due to drainage of the obstructed biliary system resulting in high fluid losses.

The mortality rate for those with underlying malignant aetiology was 18.7% and benign 4.3%, with an overall mortality rate of 15.3%. All of these mortality rates were lower than in the BSIR registry and no death was directly due to the biliary intervention. Of particular note, the benign aetiology mortality rate was lower that the malignant aetiology rate despite each patient on average undergoing a higher number of procedures (2.3 vs 1.6). This confirms the widely held belief that the underlying health of the patient is a major factor in outcome. High risk patients may be identified including those with multiple comorbidities, low albumin or raised inflammatory markers to improve patient selection prior to intervention.

Conclusion

The mortality rate in NNUH is less than that determined by the BSIR audit, particularly for benign aetiology. Our main complications were the same as those observed in the BSIR audit, namely pain, sepsis, renal failure and bleeding. This audit found that pain and renal failure were complications that needed addressing so recommendations were made. Pain management has since been addressed by administering intra-procedural intravenous paracetamol. Renal failure has been addressed by ensuring that the patient is well hydrated prior to the procedure and by administering post-procedural intravenous fluids, especially if high biliary losses are anticipated. We would like to re-audit in one year having instigated more careful patient selection.

Reference:
BSIR First Biliary Drainage and Stent Audit Report, Uberoi *et al*, 2009