Introduction Brushings at ERCP play a crucial role in establishing a diagnosis in cases of biliary strictures. In this study, we examined if brushing practice can make a difference to the diagnostic yield resulting in less interventions. We analysed ERCP data over the last two and a half years at the Royal Berkshire Hospital, where inclusion of the brush head for cytology and performing three or more passages across the stricture has been standard practice.

Methods We looked at results of brushings taken by 2 ERCPists in a single centre between September 2016 to February 2018. The initial brushing result from each individual patient was included. Brushing results were classified as non-diagnostic, negative, atypical, suspicious or positive for malignancy. Brushings classified as suspicious and identified as malignant were categorised into the positive group; those classified as non-diagnostic, non-malignant and atypical were categorised as negative. For comparison purposes we considered the corresponding histology and/or radiological findings and/or positive immunohistochemistry in the follow-up period. Data was analysed using the statistical package SPSS v.25.

Results In total, 71 individual brushing outcomes were identified over a 2.5-year period. In 61 of 71 cases (85.9%) the final diagnosis was cancer, with the majority being pancreatic cancer (36/61; 59%). The sensitivity was estimated at 77% (47/61 true positive), the specificity and the positive predictive value (PPV) were both 100% (0 false negative, 10 true negative), while the negative predictive value (NPV) was 38%. When we looked at only 'positive for malignancy' results, the sensitivity stood at 60%. In 15/61 cases (24.6%) a supplementary report was needed to confirm the result and it changed the outcome in only 3 cases (20%).

Conclusions Biliary brushings are a very useful means of providing a diagnosis during ERCP and are characterised by a high PPV and low NPV. Negative results should not be interpreted as absence of malignancy but if the yield is at least suspicious, the specificity approaches 100%. This study suggests that sending the brush head for cytology and performing three or more passages across the stricture increases diagnostic sensitivity when compared to published data reporting on sensitivities up to 64% (Burnett AS, Calvert TJ, Chokshi RJ. *Sensitivity of endoscopic retrograde cholangiopancreatography standard cytology: 10-y review of the literature. J Surg Res.* 2013;184:304–11.)

PTU-125 FACTORS INFLUENCING INCREASED ERCP BRUSHING SENSITIVITY IN PANCREATICOBILIARY MALIGNANCY: A SINGLE CENTRE EXPERIENCE

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10.1136/gutjnl-2019-BSGAbstracts.114

Introduction Biliary brushings are often the only way to confirm a diagnosis of malignancy in patients presenting with biliary strictures. There is a paucity of data regarding the parameters that may affect the diagnostic yield of this

technique. The aim of this study was to identify key factors that may improve diagnostic sensitivity in hepatobiliary malignancies.

Methods Brushing outcomes were identified over a 2-year period and analysed by demographic factors (age, sex), indication of the procedure, site and length of stenosis on ERCP, CBD dilatation on CT/MRCP/ERCP, site and size of mass, laboratory values (ALP, ALT, bilirubin) prior to the procedure, and final outcome (histologically or radiologically confirmed). We calculated the ratio of at least suspicious for malignancy results out of the total cases of malignancies. Final outcome was defined by histology or radiological evidence of cancer in the follow-up period. Data was retrospectively retrieved and processed using the EPR (electronic patient record) hospital database and the radiology InSight PACS system. Data was analysed using the statistical package SPSS v.25.

Results A total of 59 brushing results were identified over the period 01/2017–01/2019. 52 (88.1%) were malignant and 7 (11.9%) were benign. The mean age was 71.4 yrs and the majority of malignancies were pancreatic cancer (33/52; 63.5%), with the remainder including cholangiocarcinoma (7), ampullary cancer (6) and other malignancies. Forty of 52 cases were true positives, indicating a sensitivity of 76.9%, while the specificity was 100% (no false negative and 7/7 true negative).

Among the factors examined, sensitivity was significantly associated with the site of stenosis (89.2% for distal vs. 50% for mid and mid-distal stenoses, $p=0.023$), and with the mass being in the pancreatic head versus in the uncinate process (84.6 vs 40%, $p=0.029$). Sensitivity was higher for longer strictures (63.6% vs 46% for strictures >1.9 cm (i.e. the median value), and for larger masses (mean size of mass 4 cm in true positive vs 2.6 cm in false negatives) but these results did not reach statistical significance. The age, CBD dilatation on imaging, type of cancer and the laboratory markers before the procedure were not associated with differences in the diagnostic yield.

Conclusions Distal CBD stenoses and pancreatic head lesions are associated with statistically significant increase in brushing sensitivity for malignancy. This study suggests that in the absence of a distal CBD stricture or a pancreatic head lesion, further investigation modalities (additional brushings, EUS, percutaneous biopsy, cholangioscopy) will be more likely required to achieve diagnostic certainty.

PTU-126 RESULTS OF USING COLORECTAL SEMS VS DECOMPRESSION TUBE AS BRIDGE TO SURGERY: COMPARATIVE RANDOMIZED TRIAL

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10.1136/gutjnl-2019-BSGAbstracts.115

Introduction Despite advances in screening and early diagnosis, about 15% of colorectal cancers present with acute colonic