**The presence of a metal biliary stent has a negative impact on tissue diagnosis of head of pancreas masses**

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**Objective & Aim**

Self-expanding metal stents (SEMS) are superior to plastic stents (PS) for relief of biliary obstruction due to a mass in the head of pancreas (HOP). Endoscopic ultrasound (EUS) fine needle aspiration (FNA) or fine needle biopsy (FNB) is recommended as the first line technique when a tissue diagnosis is required. However, it is unclear as to whether SEMS/ PS impair the performance of EUS- tissue sampling (TS). Therefore, the aim of this study was to assess whether SEMS/PS impair accurate EUS tissue diagnosis in HOP masses.

**Methods**

All patients with a HOP mass who had EUS guided TS between January 2010 and June 2016 were included. Strict pathological criteria were used for diagnosis of malignancy. All patients had at least 6 months follow-up.

**Results**

A total of 1861 EUS-TS were performed over the study period. 698 procedures were performed in 631 individuals for HOP mass (mean age was 65.4±10.9 years). 535 (85%) were malignant; 141 had prior SEMS, 149 prior PS and 341 without stent (WS). EUS-TS had 73% (511/698) overall accuracy; SEMS accuracy was 67% (109/163) compared to 69% (115/167) for PS and 78% (287/368) in WS. On multivariable analysis the presence of SEMS was associated with incorrect diagnosis (OR 1.96 95% CI 1.24-3.1, p=0.02). Increasing tumour size, increasing number of passes and use of a Sharkcore needle were independently associated with improved accuracy (Table 1). Repeat TS was more common (10.2%) in cases with SEMS than in those WS (4.5%) or PS (2.9%, p<0.02).There was no difference between PS and WS.

**Conclusion**

The presence of SEMS has a negative impact on tissue diagnosis of HOP masses, leading to more repeat procedures, which is likely to delay treatment.

**Table 1.** Factors associated with incorrect tissue diagnosis in patients with definite diagnosis, benign or cancer, applying multivariable diagnosis.

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Category** | **Odds Ratio (95% CI)** | **P-value** |
| **Number of passes** | - | 0.84 (0.72, 0.99) | 0.04 |
| **Type of needle (++)** | FNA | 1 | 0.04 |
|  | Procore | 0.81 (0.52, 1.26) |  |
|  | Sharkcore | 0.52 (0.31, 0.86) |  |
| **Stent type** | No stent | 1 | 0.02 |
|  | Metal | 1.96 (1.24, 3.10) |  |
|  | Plastic | 1.22 (0.76, 1.97) |  |
| **Tumour size (mm) (\*)** | - | 0.72 (0.59, 0.87) | 0.001 |

(\*) Odds Ratios given for a 10-unit increase in predictor variable

(++) Omitting data from 1 patient with multiple needle types