Materials and Methods: UroVysion FISH was carried out as described in the Abbott/Vysis package directions. Biliary brush cytology: variable sensitivity for detection of malignancy (50% - 90%).

Pancreatobiliary Carcinoma Diagnosis

1. Blurred brush cytology: variable sensitivity for detection of malignancy (60%).
   - Ancillary testing such as FISH show higher specificity than cytology alone.

Introduction to UroVysion FISH for GI Specimens

UroVysion FISH kit (Abbott/Vysis) is used for pancreaticobiliary concerns: Multicolor, Multicolor FISH Kit to Detect: Amplification of Chromosomes
   1. 3 Signal
   2. 4 Signal
   3. 5 Signal
   4. 6 Signal
   5. 7 Signal
   6. 8 Signal

Chromosomal Abnormalities for GI Specimens

1. Polymorphisms (2 or more probes detect gains in 5 or more cells)
2. Trisomy (only one probe shows signal gain in 3 or more cells)

What is in mucus strands? Varies by patient, but may include, as shown in figure below:

a) DNA (stained with DAPI)

b) Mucin (labeled with lectin from Ulex europaeus - FITC)

Overall Summary and Conclusions

• UroVysion FISH is a useful ancillary method for pancreatobiliary specimens, and has been shown to be clinically more sensitive than cytological evaluation alone (Ferri-Fricker et al., 2007; Fricker, et al., 2009; Moreno-Luna and Goren, 2006; Moreno-Luna, et al., 2006).
• Sample preparation challenging in presence of mucous - knowledge of composition may guide approaches to reducing viscosity
• Mucin
• DAPI
• Actin

Further consideration of 2 Different Cases

For stained and highly abnormal cytology, interpretation, positive FISH interpretations may provide support for clinical correlation and further follow-up of patient.

References

Halling KC, Kipp BR, Human Pathol. 2007;38(8):1137-1144
Moreno-Luna ET al. Gastroenterology. 2006;130A: S1245-130
Rubin BK Respiratory Care 2007;52(7):859-865

Acknowledgments

Matt Riding, CT (ASCP), Supervisor ARUP Cytology, & ARUP Cytology Staff
Man Small Slide Method (Histoacetic acid) best with mucous samples, but UroVysion UroCyte filter method also may be used

Reproducibility

Duet Imaging System to Aid in Interpretation.

BioView FISH was carried out as described in the Abbott/Vysis package directions. Biliary brush cytology: variable sensitivity for detection of malignancy (50% - 90%).

Materials and Methods: UroVysion FISH was carried out as described in the Abbott/Vysis package directions. Biliary brush cytology: variable sensitivity for detection of malignancy (50% - 90%).

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Table: Comparison and Concordance Between UroVysion FISH & Cytology

<table>
<thead>
<tr>
<th>Cytology Interpretation</th>
<th>FISH Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Negative</td>
</tr>
<tr>
<td>Abnormal</td>
<td>Positive (Trisomy)</td>
</tr>
<tr>
<td>Abnormal</td>
<td>Positive (Polysomy)</td>
</tr>
<tr>
<td>Abnormal</td>
<td>Equivocal (tetrasomy)</td>
</tr>
<tr>
<td>Abnormal</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Preliminary studies suggest increased and mucin can be reduced with wash in brine. Cytology which correlates reasonably well with FISH.

Acknowledgments

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Conflict of Interest: The authors declare that no conflict of interest relationship exists.