Introduction and Objective

- Expanded quantitative urine culture (EQUC) combined with 16s rRNA sequencing have been used to prove the existence of a urinary microbiome.

- The pediatric urinary microbiome of asymptomatic healthy infants has not been characterized using EQUC.

- Using a modified EQUC, we hypothesize that a urinary microbiome may be detectable with EQUC.

Methods

- IRB approval was obtained to collect sterile catheterized urine samples from healthy infants less than 12 months of age undergoing an elective circumcision under general anesthesia.

- Exclusion criteria: History of UTI, genitourinary anomaly, prior urethral catheterization, preoperative antibiotics.

- 100μ of urine aliquots were plated in 5% Sheep’s Blood and Brucella agars, incubated aerobically and anaerobically at 5% CO2 for 2 to 5 days.

- Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF) was used to identify obligate anaerobic bacterial isolates.

Results

- 13 parents consented to this study

- Mean age at surgery was 268 days (range 183 to 348 days)

- 5 of 13 samples grew suspected obligate anaerobes after confirmation with aerotolerance test.

- Only one sample grew more than one species.

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actinotignum schaalii</td>
<td>4</td>
</tr>
<tr>
<td>Peptoniphilus harei</td>
<td>1</td>
</tr>
<tr>
<td>Clostridium sordelli</td>
<td>1</td>
</tr>
</tbody>
</table>

Conclusion

- *Actinotignum schaalii* is a gram-positive facultative anaerobe and an emerging pathogen identified by EQUC and MALDI-TOF in older adult patients with urologic conditions.

- We found this species present in 31% of patients.

- This is the first time the presence of this species has been reported in healthy infants.

- Future work is further collection of samples comparing EQUC results with 16s rRNA sequencing.