

Q3 2018 Throat Culture

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Q3 2018 Throat Culture

Specimen 1 - 9 year old Female, Fever, sore throat

| Organisms | Extent | 1 | 2 | 3 | 4 | 5 | Total |
|---|--------|----|----|---|---|---|-------|
| 922 - Neg for Grp A strep screen by culture | | 21 | 17 | 7 | 1 | 1 | 47 |
| 975 - Neg for strep Group A antigen | | 1 | 1 | 2 | 0 | 2 | 6 |
| 919 - Neg for beta-hemolytic strep screen | | 1 | 0 | 0 | 0 | 0 | 1 |

TOTAL PARTICIPANTS 54

Flagging appears for failure to report (No Codes)

In addition to the required organism, participants in all extents may report 919, 922, and 975.

This sample contained no pathogenic organism.

Inoculated media from this patient's throat swab grew 2+ *Staphylococcus epidermidis*. When specimens are obtained by non-invasive procedures, normal respiratory or oropharyngeal flora is expected from sources collected. Typical organisms commonly present in the upper respiratory tract of healthy individuals include non-hemolytic streptococci, not Group B streptococcus (GBS), β-hemolytic streptococci (not *Streptococcus pneumoniae*), coagulase negative staphylococci, and micrococci, for example. Therefore, throat culture results such as 2+ *S. epidermidis* after 48 hours of incubation would be considered negative for pathogenic organisms and typically reported as "No pathogenic streptococci isolated" or "Normal upper respiratory microbiota", for example. Importantly, reporting the presence or the absence of pathogenic bacteria without description of other "commensal" organisms (i.e., by name) provides the clearest message for directing patient management, and is consistent with antimicrobial stewardship principles and practices.

Specimen 2 - 14 year old Male, Fever, severe sore throat

| Organisms | Extent | 1 | 2 | 3 | 4 | 5 | Total |
|--|--------|----|----|---|---|---|-------|
| 923 - Pos for Grp A strep screen by culture | | 21 | 17 | 7 | 1 | 1 | 47 |
| 976 - Pos for strep Group A antigen | | 1 | 1 | 2 | 0 | 2 | 6 |
| 921 - Pos for beta-hemolytic strep screen | | 1 | 0 | 0 | 0 | 1 | 2 |
| 886 - Streptococcus sp.; beta-hemolytic Grp A (<i>S. pyogenes</i>) | | 0 | 1 | 0 | 0 | 0 | 1 |

TOTAL PARTICIPANTS 56

Flagging appears for failure to report 886, 887, 921, 923, 943, 976 or 985.

In addition to the required organism, participants in all extents may report 898.

This sample contained *Streptococcus pyogenes* Group A and alpha Strep and *Neisseria* sp.

Infection is the most common cause of sore throat (with or without fever) and the causative agents of pharyngitis in children and adolescents are usually a viral etiology (e.g., rhinovirus, coronavirus, influenza viruses (A or B)) or group A Streptococcus (GAS). Culture of this patient's throat swab displayed 4+ growth of *Streptococcus pyogenes* also referred to as Group A β-hemolytic streptococcus (GABHS; based on the Lancefield classification for grouping streptococci according to their carbohydrate cell wall antigens) and 1+ *Neisseria* spp. The presence of any β-hemolytic streptococcus grown in a throat culture should be evaluated for possible clinical significance. Accordingly, any β-hemolytic, catalase-negative, gram-positive cocci in pairs and/or chains can be confirmed as *S. pyogenes* by either: 1) positive PYR test; 2) positive result for GABHS antigen with immunological grouping test; or 3) positive DNA probe test. Lastly, the presence of *Neisseria* spp. in this culture reflects the presence of commensal organisms in the oropharynx and should be reported as such (e.g., "Usual upper respiratory microbiota"). However, one should be sure to investigate predominant oxidase positive, gram-negative diplococci (i.e., not growing on blood agar) to rule-out gonococcus (e.g., pattern of oxidation of carbohydrates, and other selective tests).

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Specimen 3 - 4 year old Male, Fever

| Organisms | Extent | 1 | 2 | 3 | 4 | 5 | Total |
|--|--------|----|----|---|---|---|-------|
| 923 - Pos for Grp A strep screen by culture | | 21 | 17 | 7 | 1 | 1 | 47 |
| 976 - Pos for strep Group A antigen | | 1 | 2 | 2 | 0 | 2 | 7 |
| 921 - Pos for beta-hemolytic strep screen | | 1 | 0 | 0 | 0 | 1 | 2 |
| 886 - Streptococcus sp.; beta-hemolytic Grp A (<i>S. pyogenes</i>) | | 0 | 1 | 0 | 0 | 0 | 1 |
| TOTAL PARTICIPANTS | | | | | | | 57 |

Flagging appears for failure to report 886, 921, 923 or 976.

In addition to the required organism, participants in all extents may report (No additional codes).

This specimen contained *Streptococcus pyogenes Group A* and *Staphylococcus epidermidis*.

Culture of this child's throat swab displayed 3+ growth of or group A Streptococcus (GAS). Symptoms of streptococcal infections can be atypical in young children. That is, instead of a well-defined episode of pharyngitis, they may have protracted symptoms of nasal congestion and/or low-grade fever (e.g., <38.3°C [101°F]) with or without cervical adenopathy, for example. Despite the difficulty of obtaining throat swab specimens from young children, specimens must be obtained from the posterior pharynx (i.e. tonsils). Importantly, fewer bacteria are present in the anterior areas of the mouth, and the mouth (particularly saliva) is colonized with bacteria that inhibit the growth of *S. pyogenes*. Therefore, contamination of even a properly collected specimen may obscure or suppress the growth of this fastidious organism.

Specimen 4 - 33 year old Female, Sore throat

| Organisms | Extent | 1 | 2 | 3 | 4 | 5 | Total |
|--|--------|----|----|---|---|---|-------|
| 923 - Pos for Grp A strep screen by culture | | 21 | 17 | 7 | 1 | 1 | 47 |
| 976 - Pos for strep Group A antigen | | 1 | 1 | 2 | 0 | 2 | 6 |
| 921 - Pos for beta-hemolytic strep screen | | 1 | 0 | 0 | 0 | 1 | 2 |
| 886 - Streptococcus sp.; beta-hemolytic Grp A (<i>S. pyogenes</i>) | | 0 | 1 | 0 | 0 | 0 | 1 |
| TOTAL PARTICIPANTS | | | | | | | 56 |

Flagging appears for failure to report 881, 886, 921, 923, 943 or 976.

In addition to the required organism, participants in all extents may report (No additional codes).

This specimen contained *Streptococcus pyogenes Group A* and *Neisseria spp.*

Culture for this patient demonstrated abundant (3+) growth of *Streptococcus pyogenes* and 1+ growth of oxidase-positive, yellow colonies with growth on blood and chocolate agar. *S. pyogenes* or Group A β-hemolytic streptococcus (GABHA) accounts for 30% of pharyngitis cases in children (ages 5 to 15), but only 10% of adult cases. So, while a rare case of acute pharyngitis for this demographic, it can and does occur. Other bacterial causes of pharyngitis include group C and G β-hemolytic streptococci, *Neisseria gonorrhoeae*, *Corynebacterium diphtheria*, and *Arcanobacterium haemolyticum*. However, most cases have a viral etiology (e.g., rhinovirus, coronavirus). Given the emergence of commercial rapid diagnostic tests (RDTs; antigen- and nucleic acid-based) for GABHA and their comparable performance to that of culture, most guidelines are no longer recommending routine culture to back-up negative RDTs (especially, in this age category), but rather leave the decision to the physician to order when indicated (e.g., outbreak investigations, monitoring the spread of antimicrobial resistance, examination for pathogens other than GABHS). Lastly, the presence of saprophytic *Neisseria spp.* in this culture reflects the presence of commensal organisms in the oropharynx and can be reported as "Usual upper respiratory microbiota", for example.

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Specimen 5 - 18 year old Male, Fever

| Organisms | Extent | 1 | 2 | 3 | 4 | 5 | Total |
|---|---------------|--------------------|----------|----------|----------|----------|--------------|
| 922 - Neg for Grp A strep screen by culture | | 21 | 17 | 7 | 1 | 2 | 48 |
| 975 - Neg for strep Group A antigen | | 1 | 1 | 2 | 0 | 2 | 6 |
| 919 - Neg for beta-hemolytic strep screen | | 1 | 0 | 0 | 0 | 0 | 1 |
| 943 - Aerobe found; but referred for ID | | 0 | 0 | 0 | 0 | 1 | 1 |
| | | TOTAL PARTICIPANTS | | | | | 56 |

Flagging appears for failure to report 873, 877, 919, 922, 943 or 975.

In addition to the required organism, participants in all extents may report (No additional codes).

This sample contained *Staphylococcus aureus*.

Semi-quantitative culture of this patient's throat swab demonstrated abundant (4+) growth of *Streptococcus aureus* for this patient. Importantly, *S. aureus* is a part of the normal upper respiratory flora. While the presence of organisms other than group A streptococci (including *S. aureus*) have been implicated as one explanation for the failure of penicillin alone to prevent recurrent episodes, there is no evidence that this organism causes acute pharyngitis. Therefore, its presence should, therefore, not be reported. Interestingly, this patient presented with fever (i.e., without sore throat) due to an underlying MRSA pneumonia. Heavy *S. aureus* colonization is not uncommon for such patients and can also be clinically significant in patients with recurrent skin and soft tissue infection and other acute invasive infections such as bacteremia, as well. That said, while its presence (as in this case) may be clinically significant, over-reporting of *S. aureus* in this setting may encourage indiscriminate antimicrobial therapy. Rather, physicians can screen these at-risk patients for colonization with *S. aureus* by collecting nasal and/or rectal swabs.