

Q3 2019 Throat Culture



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Q3 2019 Throat Culture

Specimen 11 - 12 year old Male, Swollen lymph nodes

Organisms	Extent	1	2	3	4	5	Total
923 - Pos for Grp A strep screen by culture		17	17	7	0	2	43
976 - Pos for strep Group A antigen		1	6	0	0	0	7
922 - Neg for Grp A strep screen by culture		1	0	0	0	0	1
921 - Pos for beta-hemolytic strep screen		1	0	0	0	0	1
TOTAL PARTICIPANTS							52

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

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

This sample contained *Streptococcus pyogenes*, Group A and *Staphylococcus epidermidis*.

Culture of this patient's throat swab displayed abundant 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 scant coagulase-negative Staphylococci (i.e., CoNS; limited to the growth in the first quadrant). Cervical lymphadenopathy and age 3 to 14 are two criteria used in GABHS clinical prediction scoring systems, and therefore, serves as clinical validation of laboratory findings in this scenario. The presence of any β -hemolytic streptococcus grown in a throat culture should be evaluated for possible clinical significance. Accordingly, any β -hemolytic, catalase^{neg}, gram-positive cocci in pairs 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 (1+) CoNS in this culture reflects the presence of commensal organisms in the oropharynx and should be reported as such (e.g., "Usual upper respiratory microbiota").

Specimen 12 - 20 year old Male, Fever, cough

Organisms	Extent	1	2	3	4	5	Total
922 - Neg for Grp A strep screen by culture		17	16	7	0	2	42
975 - Neg for strep Group A antigen		1	6	0	0	0	7
949 - No aerobic growth		0	1	0	0	0	1
923 - Pos for Grp A strep screen by culture		1	0	0	0	0	1
919 - Neg for beta-hemolytic strep screen		1	0	0	0	0	1
TOTAL PARTICIPANTS							52

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

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

This sample contained *Staphylococcus aureus* and *Neisseria* sp.

Present in this patient's throat culture were bacteria that should be considered to be normal oropharyngeal flora, namely, *Neisseria meningitidis*. While this organism can certainly produce a variety of clinical manifestations, ranging from transient fever and bacteremia to fulminant disease, it is not typically associated with acute pharyngitis and should not be reported from such cultures. That is, the clinical relevance of culturing *N. meningitidis* from this site cannot be determined, and may result (if reported) in the patient receiving an unnecessary course of antibiotic therapy, thus fostering the development of resistance.

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Specimen 13 - 8 year old Female, Sore throat

Organisms	Extent	1	2	3	4	5	Total
922 - Neg for Grp A strep screen by culture		17	16	7	0	1	41
975 - Neg for strep Group A antigen		1	6	0	0	0	7
923 - Pos for Grp A strep screen by culture		1	1	0	0	1	3
919 - Neg for beta-hemolytic strep screen		1	0	0	0	0	1
TOTAL PARTICIPANTS							52

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

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

This specimen contained alpha Strep.

This inoculated blood agar plate utilized for this patient's throat culture was negative for pathogenic organisms, typically reported as "No pathogenic streptococci isolated". However, few β -hemolytic streptococci (i.e., first quadrant growth only) were identified. Such organisms from a throat culture can be added to a throat culture report (as above) as "Normal upper respiratory microbiota" or "Mixed flora", for example. That is, reporting the presence or the absence of pathogenic bacteria without description of other organisms (*by name*) that may be commensals provides the clearest message for directing patient management, and is consistent with antimicrobial stewardship principles and practices.

Specimen 14 - 3 year old Male, Fever

Organisms	Extent	1	2	3	4	5	Total
922 - Neg for Grp A strep screen by culture		17	16	7	0	2	42
975 - Neg for strep Group A antigen		1	6	0	0	0	7
949 - No aerobic growth		0	1	0	0	0	1
923 - Pos for Grp A strep screen by culture		1	0	0	0	0	1
919 - Neg for beta-hemolytic strep screen		1	0	0	0	0	1
TOTAL PARTICIPANTS							52

Flagging appears for failure to report 799, 919, 922, 943, 949, or 975.

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

This specimen contained *Escherichia coli* and *Neisseria* sp.

Abundant (4+) growth of *Escherichia coli* and few *Neisseria* spp. colonies were isolated from this patient's throat culture. While the *Neisseria* spp. should be considered (and reported) as resident microbiota, enteric organisms (such as *Escherichia coli*, in this case) are infrequent as colonizers of the upper respiratory tract, but also not considered to have a pathogenic role in pharyngitis. However, this case involved a hospitalized 3 year-old boy that also had lower respiratory specimen that was growing the same organism, and therefore, the likely reason for the observed result. While viruses (i.e., predominantly RSV) are the most common cause of pediatric nosocomial respiratory tract infections, gram-negative bacteria (*E. coli*, *K. pneumoniae*, and *P. aeruginosa*) are the predominant bacterial pathogens, and are associated with a high mortality rate. Therefore, while adherence to reporting protocols is paramount, unusual results such as this should be communicated to clinical laboratory leadership to be investigated further.

Specimen 15 - 68 year old Female, Cough, fever, sore throat

Organisms	Extent	1	2	3	4	5	Total
923 - Pos for Grp A strep screen by culture		17	17	7	0	2	43
976 - Pos for strep Group A antigen		1	6	0	0	0	7
922 - Neg for Grp A strep screen by culture		1	0	0	0	0	1
921 - Pos for beta-hemolytic strep screen		1	0	0	0	0	1
TOTAL PARTICIPANTS							52

Q3 2019 Throat Culture

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

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

This sample contained *Streptococcus pyogenes*, Group A.

Culture demonstrated abundant growth of *Streptococcus pyogenes* for this patient. *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 cause 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).