

Bacterial Etiology of Leucorrhea

Principal Investigators : Chiraphun Duangmani, M.D.
Pramool Sukwatana, M.D.¹
Gary D. Phillips, CPT, MSC

Assistant Investigators : Tatsanee Occeno, B.Sc.
Kanchana Leerasiri, B.Sc.

OBJECTIVE : To determine the aerobic and anaerobic bacteria associated with leucorrhea in cervicitis patients,

BACKGROUND : Leucorrhea is one of the most frequently encountered conditions seen in females attending the obstetric and gynecological clinic of the Phra Mongkutklao Hospital, Bangkok, Thailand. The condition may be the result of infection with bacteria, fungi, parasites or viruses. The purpose of this study is to determine the aerobic and anaerobic organisms present in discharges from cervicitis patients.

DESCRIPTION : Specimens were obtained from cervicitis patients attending the obstetrics and gynecology clinic of the Phra mongkutklao Hospital. Routine cervical swabs were immediately streaked on Thayer - Martin chocolate agar, 5% sheep blood agar, and MacConkey agar poured in standard petri plates. After specimens were obtained they were sent to the bacteriology section of the SEATO Medical Research Laboratory within two hours. The chocolate agar plates were incubated in candle extinction jars for the detection of *Neisseria gonorrhoea*. Blood agar and MacConkey agar plates were incubated aerobically. All cultures were incubated at 37°C, and were examined at 24 and 48 hours. An additional cervical swab was obtained for the culture of anaerobic organisms. This swab was placed in tubed cooked meat broth media, incubated at 37°C in anaerobic jars using Gas - Paks (Baltimore Biologicals, Cockeysville, Md.) to establish an oxygen free atmosphere. Cultures were observed seven days for growth with routine subcultures to biochemical media being made when indicated.

RESULTS : During the period July 1975 - April 1976 a total of 78 specimens were cultured for aerobic organisms, and 69 for anaerobes. *Neisseria gonorrhoeae* was isolated from two patients (2.5%). This result was similar to that found in 1972 - 73 study of gonorrhea in asymptomatic females performed in the same hospital where 3.5% were found to be harboring the gonococcus.

Aerobic bacterial isolates from cervical cultures are presented in Table 1. *Staphylococcus epidermidis* and alpha hemolytic streptococci were found frequently, occurring in 54% and 36% of the patients respectively. *Candida albicans* was isolated in 15 of 78 patients (19%). This yeast was also isolated in throat cultures from three patients whose cervical cultures revealed *C. albicans*. Anaerobic bacterial isolates are shown in Table 2. Sixty nine specimens were submitted for anaerobic cultures. *Clostridium perfringens* was isolated in five patients (7.3%). However; this organism is often found as a harmless inhabitant of the vagina. Other anaerobic organisms isolated include the Peptostreptococcus, Peptococcus, Bacteroides, Veillonella and Fusobacterium groups. Anaerobic bacteria were not isolated in 19 of the 69 cultures examined.

¹ OB-GYN Clinics, Phra Mongkutklao Hospital, Bangkok

Table 1. Aerobic Bacterial Isolated from 78 Patients with Cervicitis

Organisms Isolated	No. Isolated	% Isolated
Neisseria gonorrhoeae	2	2.5
Staphylococcus epidermidis	42	53.8
Staphylococcus aureus	1	1.2
Micrococcus species	11	14.1
alpha streptococcus	28	35.8
beta streptococcus (not group A)	1	1.2
Streptococcus fecalis	3	3.8
Diphtheroids	16	20.5
Candida albicans	15	19.2
Yeast species	2	2.5
Mimae species	3	3.8
Escherichia coli	7	8.9
Enterobacter aerogenes	3	3.8
Enterobacter cloacae	1	1.2
Enterobacter hafnia	1	1.2
Intermediate coliform	3	3.8
Proteus rettgeri	1	1.2

Table 2. Anaerobic Bacterial Isolates from 69 Patients with Cervicitis

Anaerobic Organisms	No. Isolated	% Isolated
Clostridium		
C. perfringens	5	7.3
C. acetobutylicum	1	1.4
Peptostreptococcus		
Ps. intermedius	17	24.6
Ps. productus	2	2.9
Ps. anaerobius	4	5.8
Ps. parvulus	1	1.4
Peptococcus		
Pc. asaccharolyticus	7	10.2
Pc. magnus	14	20.3
Pc. proeovotii	13	18.8
Pc. constellatus	1	1.4
Bacteroides		
B. melaninogenicus	8	11.6
B. fragilis	7	10.2
Veillonella		
V. alcalescens	3	4.3
V. parvula	4	5.8
Fusobacterium		
F. nucleatum	1	1.4
No. anaerobic bacteria isolated	19	27.5