

INCIDENCE OF STREPTOCOCCAL INFECTIONS (DURING BOH, ANTENATAL AND PEURPURUM)

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Introduction

Knowledge of the typical bacterial inhabitants of the cervix could be of value in assessing the pathogenesis of several clinical entities. Organism detected in the vagina may or may not be the same inhabitants of the cervix and vice versa. Potentially pathogenic bacteria may be found throughout pregnancy. Smith believes (Smith, 1960) that bacterial infection in premature infants is the result of maternal infection which probably begins by producing amnionitis in the mother, crosses the membrane, infects the fetus and probably results in a premature birth. Franciosi *et al* (1973) have discovered that group B haemolytic streptococcal disease of the new born could be suddenly lethal to the new born. A relationship of newborn sepsis from these organisms of positive cervical and vaginal cultures of group B streptococcus is established (Hood *et al*, 1961). In addition to trauma and tissue damage, the presence of pathogenic organisms is a

necessary condition for the development of post partum infection. Patient's own cervical and vaginal bacterial flora is an important source for these organisms. The present study based on the cervical and vaginal cultures from cases of bad obstetrical history, antenatal and puerperal sepsis.

Material and Methods

Three hundred cases were taken 100 from BOH, 100 from antenatal cases and 100 from puerperal sepsis. The age group of the patients were between 20-35 years. This study was from March, 1980 to March, 1982. The technic of obtaining the culture was that a sterile vaginal speculum exposed the cervix and a dry cotton swab was rotated within the cervical os. The swab was replaced in a sterile tube and most of these were delivered to the laboratory within one hour. The swabs were cultured on to sheep blood agar and MacConkey's plate and incubated at 37°C for 24 hours. The colonies were identified and the biochemical tests were put to identify the bacteria.

Results

Out of these 300 cases, only 236 yielded

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TABLE I

	Cases examined	Positive	Positive for streptococci	Negative Postivity
BOH	100	80	5	20
Antenatal	100	80	—	20
Puerperal sepsis	100	76	5	24

TABLE II

Organism	Cases screened	Cultures positive	Percentage
E. Coli		74	25%
Staph. aureus		26	8.6%
E. coli + Staph. aureus		24	8.0%
Klebsiella		16	12.0%
Strepto. haemolyticus		10	3.3%
Lactobacilli	300	4	1.2%
Proteus		8	2.6%
Rough staphylococcus		10	3.3%
Sterile		64	21.3%

the growth. Out of 236 cases, 10 had a streptococcus.

The main organisms were E. coli and Staphylo. aureus. Our incidence of B. haemolytic streptococcus was 3.3 per cent. There was no difference in BOH cases and puerperal sepsis, although the normal antenatal cases do not show any streptococcal infection.

Discussion

The fourteenth edition of Williams Text Book of Obstetrics (1971) cites a series of post-operative puerperal infections in which only 1.6 per cent were caused by B. haemolytic streptococcus. White and Koontz (1968) reported the incidence of 4.9 per cent in antenatal period of B. haemolytic streptococcus. Hood, *et al* (1961) reported the incidence of 5.8 per cent of B. haemolytic streptococci. They say that potential pathogenic bacteria may be present in the cervixes of healthy pregnant women who go on to benign post partum courses. Jewett *et al* (1968) re-

ported an epidemic of puerperal fever caused by group A. B. haemolytic streptococci. Ledger and Heddington (1972) have recently reported 2 cases of post partum endometritis due to this organism. In both patients the infection was felt to be hospital acquired. As pointed by the case reports, B. haemolytic streptococcus can produce fatal post partum infections. S. aureus and E. coli were the organisms that caused most concern for the Boston group (Smith, 1960). For these reasons, we recommend consideration of routine examination in BOH cases and puerperium, cervical culture and prophylactic therapy for B. haemolytic streptococci.

Summary

About 300 cervical and vaginal swabs were examined in BOH, antenatal and puerperal fever. The incidence of B. haemolytic streptococci were found to be 3.3 per cent. The main organisms were E. coli and Staphylococcus aureus. The rest were Klebsiella, proteus, rough

staphylococci and lactobacilli.

References

1. Franciosi, R. A., Knostman, J. D. and Zimmerman, R. A. J.: Pediatrics, 82: 707, 1973.
2. Hood, H., Janney, A. and Hammerson, G.: Am. J. Obstet. Gynec. 82: 809, 1961.
3. Jewett, J. F., Reid, D. E. and Safon, L. E.: J.A.M.A., 206: 344, 1968.
4. Ledger, W. J. and Heddington, J. T.: Obstet. Gynec., 39: 474, 1972.
5. Smith, C. A.: J.A.M.A. 172: 433, 1960.
6. White, C. A. and Koontz, F. P.: Obstet. Gynec. 32: 402, 1968.
7. Williams Obstetrics, Fourteenth edition. Edited by L. M. Helman, J. A., Pritchard, New York, Appleton-Century-Crofts, 973: 1971.

Fourteen oligomeric proteins were identified by the method of Hirs (1957) and identified as streptococcal proteins. The molecular weights of these proteins were determined by gel permeation chromatography and were found to be in the range of 10,000 to 20,000. The amino acid compositions of these proteins were determined and were found to be similar to those of streptococcal proteins. The isoelectric points of these proteins were determined and were found to be in the range of 4.5 to 5.5. The proteins were found to be highly immunogenic and were used as antigens in the preparation of streptococcal vaccines.

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