

VAGINAL CYTOLOGY IN THE NEW BORN

by

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The infant girl at birth has to adapt herself to the sudden change from massive estrogen, progestogen milieu in utero to complete absence of sex steroids after birth. Is her genital tract sensitive to these changes and if so how does it respond? Why do some infants show genital crisis of the new born while others do not? Are there any basic biological differences between the two groups of babies.

Accurate daily serial assay of various steroids to assess endocrine status of these infants is not feasible. In adults vaginal epithelium is extremely sensitive to interplay of sex steroids. It responds in characteristic patterns to estrogens, progestogens, androgens and adrenal steroids. Colpocytogram has been found to be an excellent tool for the study of dynamic day today changes in hormonal level without in any way interfering with the biological processes or causing any discomfort to the patient. If vaginal epithelium of infants is as responsive to hormonal changes as that of the mother then the colpocytogram can be used for the study the dynamic hormonal changes in the new born.

Review of literature

Fraenkel and Papanicolaou (1958) investigated the state of genital organs during the period of secretion of mam-

mary gland of new born and described markedly uniform smears resembling preovulatory smears except for absence of cornification. Bonine (1950) reported that during the first few days of life, vaginal epithelium which had undergone proliferation under the influence of maternal hormones rapidly became thined. Smolka (1965) found that in some cases keratinised anucleate squames made their appearances by the 4th day and persisted till two weeks. Wachtel (1964) showed that smears of the new born resembled maternal smears at term and that a uniform fall in the KPI occurred during the first eight days of life. All the new borns with or without genital crisis showed the same uniform pattern. R.B.C. and W.B.C. made their appearance in all cases by 5th-7th day. But Carreras and Marzone (1963) reported that 10 out of 20 infants they studied showed genital crisis and in them superficial cells persisted for a longer period. Elstien (1963) found to difference between the two groups.

Material and Methods

Forty-two healthy term infants delivered by elective caesarean section were taken up for the study. Serial vaginal smears were taken daily upto 12 days in all cases and in two cases upto 17 days. Smears were taken with a small slender cotton wool applicator and immediately fixed and stained. At the time of smear taking breasts and vulva were examined for evidence of genital crisis. Six babies had genital crisis.

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Observations

Smears were remarkably uniform in all babies. Smears taken on the first two days resembled pregnancy smears so closely that it was obvious that the mother and baby were under the same hormonal environment. (Fig. 1). Smears were strikingly free of bacterial debris, WBC and RBC. On the 2nd and 3rd day there was a maximum rise in KPI reaching upto 20-25%. Bacteria appeared in the smears by the 3rd or 4th day. By the 4th day superficial and intermediate cells were found exfoliated in large clusters showing that a massive shedding was in progress. Leucocytes and bacteria appeared and smears looked dirty. Between 4th-7th day microscopic RBC were present in all the smears whether the baby had genital crisis or not. There was a steep fall in KPI from 4th day onwards. By the 7th day smear pattern changed. Parabasal and basal cells made their appearance. (Fig. 2). Smear taking progressively became difficult due to scantiness of exfoliated material. By the 10th day parabasal and basal cells formed the majority of the cell population. By the 12th day smear consisted exclusively of small parabasal cells. (Fig. 3).

Smear pattern in the new born is uni-

form. There was no difference between the smear pattern of normal infants and those who had so called genital crisis.

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See Figs. on Art Paper I