

HISTOCHEMICAL STUDY OF FALLOPIAN TUBE DURING EARLY PUERPERIUM

STUDY OF (1) GLYCOGEN (2) NON-GLYCOGEN (3) ALKALINE PHOSPHATASE

by

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The morphological and cyclic changes in the uterus and ovaries of the human have been studied by many investigators but oviducts have received less attention. Histochemistry of fallopian tube was studied by various workers during different phase of menstrual cycle (Fawcett and Wislocki, 1951; Deane, 1952; Fredricsson, 1957 and 1959). In the present study, an attempt is made to analyse the histochemical changes during early puerperium.

Material and Method

This study is based upon histochemical examination of fallopian tubes from 70 cases admitted to Associated Groups of Hospitals, Bikaner, of which in 50 cases tubes were taken within 3 days of delivery. The remaining cases were taken as control who were non-puerperal without associated gynecological ailment and of reproductive age.

Tubal specimens were fixed in formol sublimate routinely processed and paraffin sections were prepared. These

were stained with PAS with and without diastase treatment for demonstration of glycogen and non-glycogen substances. The remaining part of tubal specimens were subjected to frozen sections and stained with azo dye coupling method of Kaplow and Hayphoefer for alkaline phosphatase (Pearse 1968).

Observation

The results derived from the histochemical observations were graded according to the intensity of staining reactions and were expressed by indices — ±, +, ++, +++ in Table 1.

Conclusion

An attempt was made in present study, to analyse histochemical changes in the fallopian tube during early puerperium and results have been expressed as (+) to (+++) depending upon the density of staining reactions as revealed by visual impressions. The indices (+) of staining reaction are not meant to indicate any qualitative values. These simply denote the state of aggregation of stainable material and consequent visual appearance about the staining density.

Analysis of the findings in the study indicate that glycogen content is variable,

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TABLE I
Histochemical Observation of Oviducts in Non-puerperal and Puerperal Groups

Cases	Glycogen	Mucopolysaccharides	Alkaline-Phosphatase
Non-puerperal cases:			
Proliferative phase	+	±	+ to ++
Early secretory phase	+ to ++	± to +	± to ++
Late secretory phase	+++	++	± to +
Menstrual phase	+++ to +++++	+ to ++	± to +
Puerperal cases	- to +	- to +	±

- absence of staining reaction ++ Moderate staining reaction
± Traces +++ Intense
+ Mild

either very low or absent during early puerperal period (Fig. 1). This may be due to withdrawal of progesterone hormone. This conclusion is further supported by presence of low concentration of glycogen in luminal epithelia during proliferative phase (Joel, 1939, Fawcett and Wislocki, 1951, Cappello and Ferreri 1967) and maximum during late secretory phase.

Observation regarding the distribution and concentration of PAS positive and diastase resistant material is similar to that noted for glycogen (Fig. 2). Low concentration or total absence of non-glycogen material during puerperium indicate low metabolic activity of cell, further supported by Fredricsson (1959).

Alkaline phosphatase activity of low intensity was demonstrated along the secretory cell surface of tubal epithelium

(Fig. 3). This low concentration of enzyme might be due to low amount of enzyme in the tissue or due to some inhibition in vivo. The low intensity may suggest that immediately after delivery biological and metabolic activities of the tubes are very much reduced.

References

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See Figs. on Art Paper I