

ULTRASTRUCTURE OF THE FALLOPIAN TUBE EIGHT YEARS AFTER STERILIZATION

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Introduction

The presence of cilia in the epithelial lining of the fallopian tube is thought to be essential for gamete transport (Balndau 1969; Odor and Blandau, 1973; Gaddum Rosse *et al* 1976). We report here a case of tubal sterilization of 8 years in whom intrauterine pregnancy occurred despite the absence of cilia in a part of the fallopian tube as evidenced by light and electron microscopic study of the ligated tube.

Case Report

A 32 year old woman presented at the clinic with the history of amenorrhoea of 7 months duration, after 8 years of sterilization. She delivered full term normal baby. Postpartum tubal sterilization was done by Pomeroy's technique and the cut ends of the tube were taken for microscopic study.

Pieces of the tissue from the isthmic and ampullary regions were fixed in modified Karnovsky's fluid (David *et al*, 1973) in 0.1 M sodium cacodylate buffer. The tissues were further dehydrated in acetone, embedded in araldite, sectioned at 0.5 μ m thickness and stained with toluidine blue for light microscopy. Ultrathin sections showing interference colours

ranging from gold to grey were taken for transmission microscopy.

Observations

The light microscopic examination showed that the tube was patent from isthmic to ampullary region (Fig. 1 & Fig. 2). The epithelial height was greatly reduced and the mucosal lining was atrophied. Marked attenuation, discontinuity or total absence of the mucosal layer was seen. Mucosal surface was frequently interrupted by areas free of epithelial cells resulting in desquamation of individual cells exposing the basal lamina at thin places. The mechanical occlusion of the tube was associated with mucosal damage, there was complete disorganization of the epithelial lining and the epithelial cells were devoid of cilia.

Ultrastructural features: There was complete degeneration and distortion of functional elements as compared to normal epithelium of the tube (Fig. 3). Mitochondria were degenerated and a golgi complex could not be visualized. The endoplasmic reticulum was barely discernible. The sloughing of the epithelial cells resulting in exposed basal lamina that could be clearly seen. The cells showed occasional microvilli but they were devoid of cilia. The overall appearance of the cells showed very low level of activity (Fig. 4).

Discussion

The disappearance of mucosal folds and formation of polypoid processes have been reported in tubes from women who have been sterilized for more than 3 years (Vasquez *et al* 1980). But the

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extent of attenuation and degeneration of mucosal lining in the present case may be due to the longer time interval after sterilization. In the present case the cilia were completely absent in the part of the tube, yet normal gamete transport had occurred resulting in fertilization and pregnancy leading to the birth of a normal child. This suggests that the tube might have functioned merely as a passage for the fertilized ovum thus making the role of cilia in the gamete transport questionable.

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See Figs. on Art Paper VI