

Koilocytosis Versus Glycogenized Epithelium In Cervical Condyloma

Thesis

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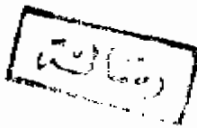
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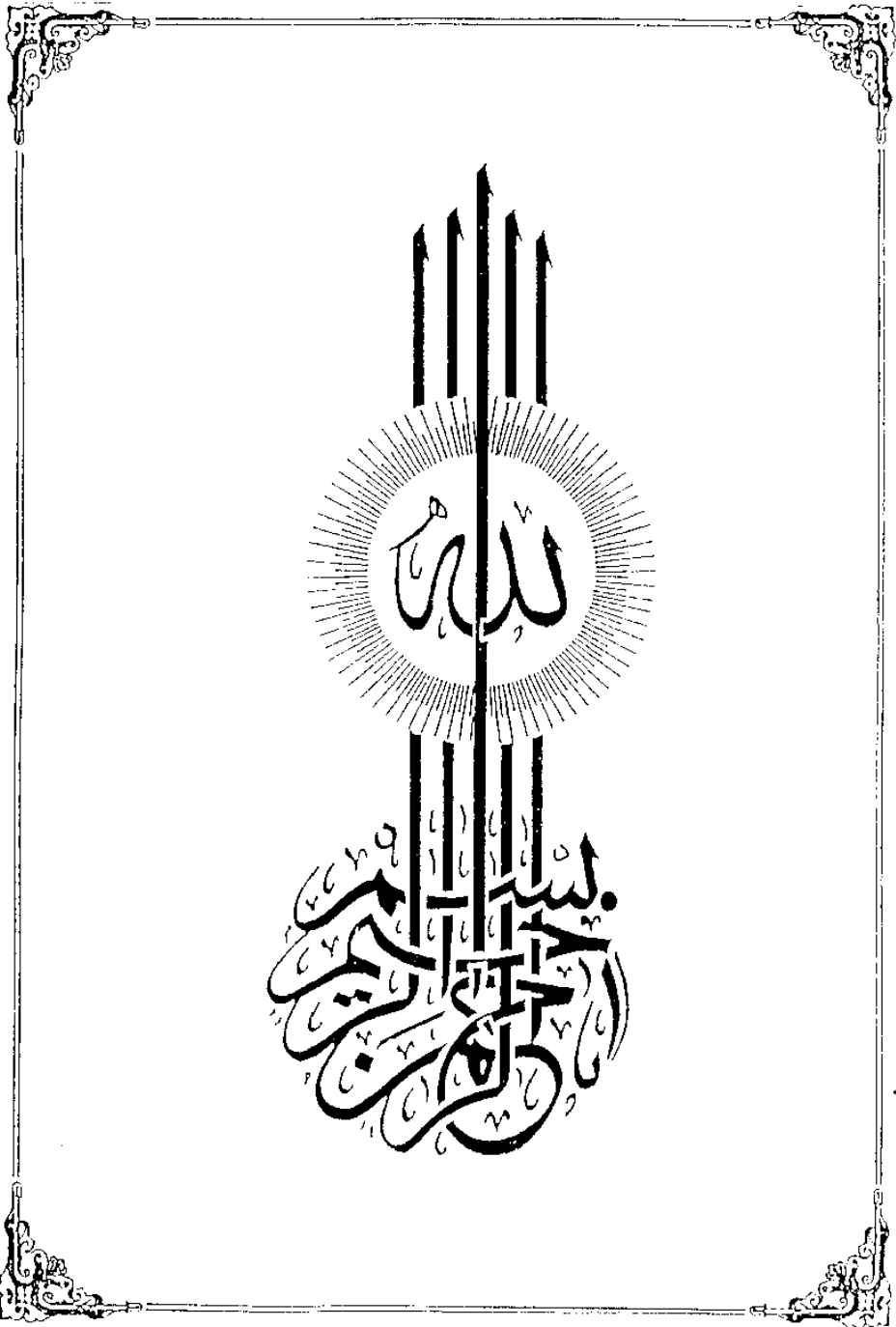
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قَالُوا

سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ





Acknowledgment

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Introduction

Beral's suggestion (1974) that cervical cancer was caused by a sexually transmitted infection came from the striking association between the temporal, socioeconomic and geographic distributions of mortality rates of cervical cancer and the incidence rates of sexually transmitted diseases.

Munoz and Bosch (1989) had found that the attention was paid for herpes simplex virus type 2 (HSV2) and that its possible role in cervical cancer remained to be clarified, but their studies favored the hypothesis that certain types of HPV had played a key etiological role.

Aim of the Work

AIM OF THE WORK

The purpose of this study is to evaluate the diagnostic accuracy in previously diagnosed cervical condyloma. False positive diagnosis of koilocytosis could be considered as a mishazard in the histopathological interpretation of such a viral cervical infection.

The cause of this misinterpretation could be ascribed to the nature of this epithelium being rich in glycogen.

Periodic Acid Schiff histochemical method for glycogen could be the clue for the histopathological re-evaluation of such a viral infection.

Review of Literature

ANATOMICAL, PHYSIOLOGICAL AND HISTOLOGICAL CONSIDERATION OF THE CERVIX

The cervix (term taken from the latin, meaning "neck") is the most inferior portion of the uterus protruding into the upper vagina. The vagina is fused circumferentially and obliquely around the distal part of the cervix, dividing it into an upper, supra vaginal and lower vaginal portion (Krantz, 1973).

The human cervix is a cylinder of fibromuscular tissue, with an average length of about 3.5 cm and an average diameter of 2.5 cm. The upper and middle thirds of the cervical canal are lined by Columnar epithelium continuous proximally with the endometrium (Reid and Campion, 1989).

The mucosa of the cervical canal (endocervix) is composed of a single layer of mucus-secreting columnar epithelium, which lined both the surface and the underlying glandular structures. The latter is traditionally called compound, tubular race mose, endocervical glands (Ferenczy, 1982).

The peripheral portion of the ectocervix is covered by squamous epithelium continuous with the vulvar skin caudally (Reid and Campion, 1989).

The exposed, or vaginal, portion of the cervix is generally lined by non-keratinizing squamous stratified epithelium, which is referred to as the "native portio epithelium". The portio epithelium is remodelled by proliferation - maturation - desquamation during the reproductive period. The epithelium is

completely replaced by a new population of cells every 4 to 5 days, and the process of squamous epithelial maturation can be accelerated to 3 days by the administration of estrogenic compounds (Koss, 1979).

In general, Estradiol - 17 B stimulated epithelial maturation and desquamation, where as progesterone inhibits maturation at the upper midzone level of the epithelium. As a result, the portio epithelium during the postnatal period is fully mature and contain large amounts of glycogen from the influence of maternal estrogen. Maturation and glycogen however are rapidly lost as the hormone disappear from the infant's circulation and the epithelium remain atrophic until the time of menarche when under the stimulatory effect of ovarian hormones, maturation and glycogen reappears (Ferenczy, 1982). The mature cervical squamous epithelium contains three zones of cells:

- 1- The basal or germinal cell layer which is responsible for continuous epithelial renewal.
- 2- The midzone or stratum spinosum, the dominant portion of the epithelium and
- 3- The superficial zone, made of the most mature cell population.

The basal zone is composed of one or two layers of elliptical cells of about 10 Mm indiameter with scant cytoplasm and oval nucleus characteristically perpendicular to the underlying basal lamina. Epithelial regeneration is the major function of the basal cells (Ferenczy and Richart 1974).

The lower third of the midzone contains larger cells than the basal variety, with a comparatively more abundant cytoplasm. Because of their geographic placement they are called Para basal cells. They are attached by numerous tonofilament - desmosomal complexes and there is the beginning of intracytoplasmic glycogenization. Phosphorylase and amylo - 1,6 glucosidase enzymes essential for glycogen synthesis are localized in this region (Foraker and Marino, 1961).

The upper portion of the midzone is occupied by cells that are involved in a process of ascending maturation, during which there is a gradual increase in the volume of the cytoplasm. Nuclear size, however, remains in contact up to the most superficial level. These cells are referred to as intermediate cells. They have PAS - positive, diastase - labile cellular glycogen which is responsible for the clear "vacuolated" appearance of their cytoplasm (Ferenczy, 1982).

The superficial zone forms the most differentiated compartment of the squamous epithelium. They are flattened and have a larger area of cytoplasm and smaller pyknotic nuclei than the underlying intermediate cells. The pink, eosinophilic and glycogen - rich cytoplasm is rich in micro filaments which provide its rigidity (Ferenczy, 1982).

Periodic Acid Schiff (PAS) Technique:

This is an extremely useful and pleasing technique to the point that in a few institution, it is used as the standard stain in place of haematoxylin-eosin. Substances containing vicinal glycol groups or their amino or alkylamine derivatives are oxidized

by periodic acid to form dialdehydes which combine with schiff's reagent to form an insoluble magenta compound. This stain therefore demonstrates glycogen (in a specific fashion, when used with a diastase - digested control) and neutral mucosubstances, outlines basement membranes and reticulin, and makes evident most types of fungi and parasites. (Rosai, 1989)