EPITHELIAL CHANGES FOLLOWING CARBON DIOXIDE LASER OF INTRA-EPITHELIAL NEOPLASIA OF THE CERVIX

THESIS

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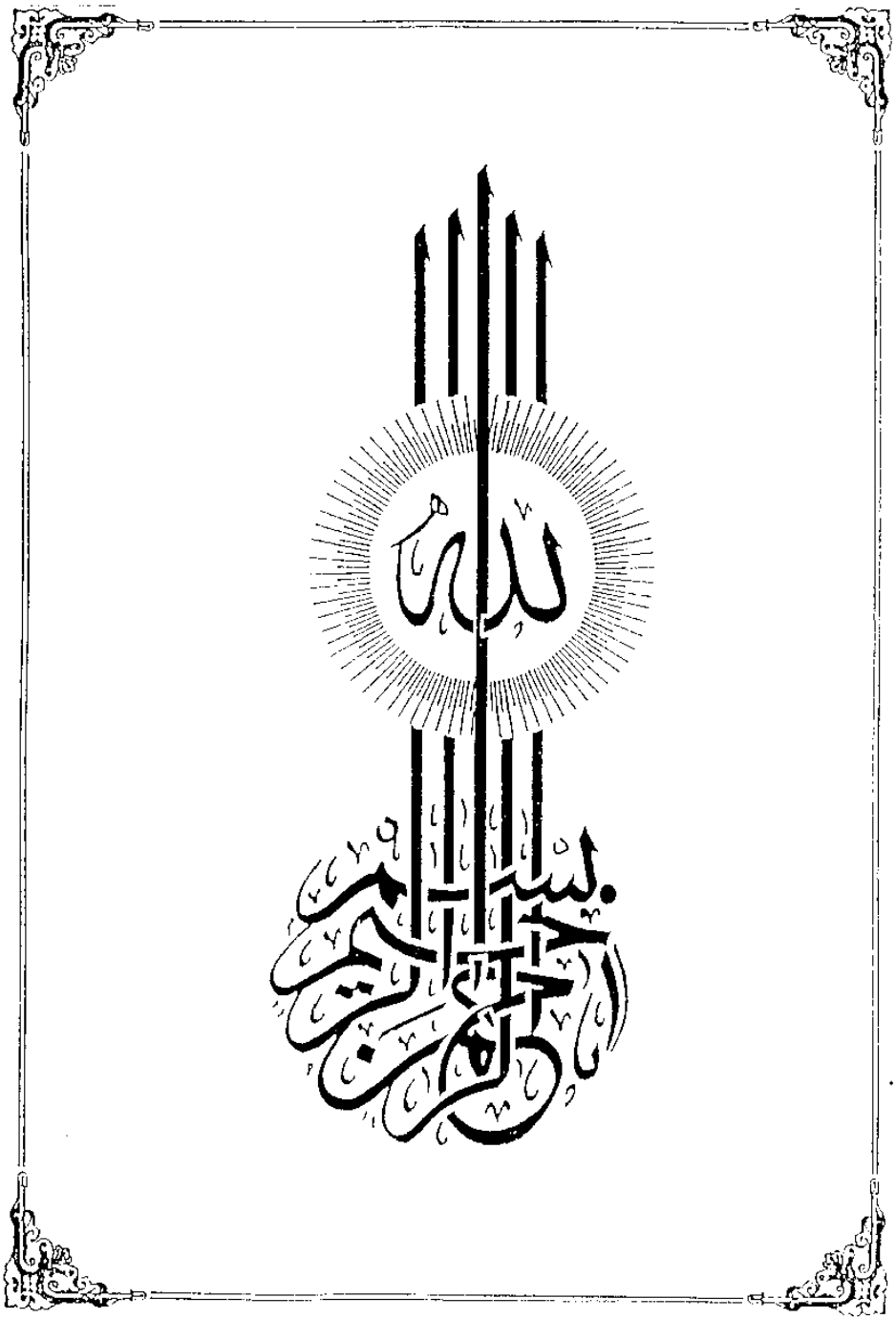
بسم الله الرحمن الرحيم

"اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ ۝ خَلَقَ الْإِنسَانَ
مِنْ عَلَقٍ ۝ اقْرَأْ وَرَبُّكَ الْأَكْرَمُ ۝ الَّذِي عَلَّمَ
بِالْقَلَمِ ۝ عَلَّمَ الْإِنسَانَ مَا لَمْ يَعْلَمْ."

صدق الله العظيم



I N D E X

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INTRODUCTION

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One of the essential responsibilities of the gynaecologist is to detect neoplasia of the female genital tract at the earliest possible opportunity and to institute appropriate treatment.

The position of the uterine cervix and its easy accessibility for examination and screening is of great advantage. This also puts the cervix in a position of great risk, being exposed to infection and carcinogenic agents. It is well established that cervical carcinoma is a sexually-transmitted disease.

Cervical intra-epithelial neoplasia and micro-invasion is a preclinical disease. Cervical screening by Papanicolaou (PAP) smear is the only practical method nowadays to identify abnormal epithelium. This brings the disease into light, when treatment can be offered. Creasman and Weed (1980) have stated that cervical cancer could be an entirely preventable malignancy if, in fact, all females were screened adequately, but unfortunately only 75 per cent of adult females take advantage of this simple and relatively painless procedure.

The implication of the apparently prolonged natural history of the disease and the highly localised nature of the lesion in most cases did not receive clinical application until the widespread application of colposcopy and conservative treatment, when Feldman et al (1978), and many others, found that there was an increase in cervical intra-epithelial neoplasia in young women early in their reproductive careers.

Conservative therapy, electrocautery, electrodiathermy, cryosurgery and cervical conization have been utilized to destroy the lesion. These procedures may be associated with scarring which may interfere with follow-up with the colposcope, as the transformation zone extends high up into the endocervical canal. There are reports of recurrent disease of greater severity developing after cryosurgery.

Carbon dioxide laser therapy has been proposed as an alternative remedy for these lesions. The laser is theoretically an ideal modality because of its precision in destroying the lesion without subsequent scarring.

AIM OF THE WORK

AIMS OF THE STUDY

The need for ambulatory methods of treatment for cervical intra-epithelial neoplasia is apparent. This is especially so where there is increasing incidence and prevalence of the lesion in young women, most of whom have not started or have not completed their families. In addition, limited funds, together with rapidly escalating costs of hospitalization and services, urged the need to seek an effective method of treatment which was simpler and less costly than hysterectomy or conization.

Colposcopically-directed carbon dioxide laser was used in this study to assess its effectiveness in the treatment of different grades of cervical intra-epithelial neoplasia. In the meantime, a correlative study between cytological, colposcopical and histopathological results have been assessed.

This study reports a correlative study between cytologic, colposcopic and histopathologic findings in patients who were referred because of abnormal cytology and who were deemed suitable for laser treatment.

Colposcopically-directed carbon dioxide laser was used in selected patients to assess its effective ness in different grades of disease. The cyto-epithelial changes and colposcopic findings after treatment were assessed and followed-up. The patients' age, parity and age at the start of sexual activity and smoking habits were also investigated in relation to the lesion.

REVIEW OF LITERATURE

HISTOLOGY AND CYTOLOGY OF THE ADULT CERVIX

Novak and Woodruff (1979) stated that the uterine cervix is the relatively narrow inferior segment of the uterus. It is differentiated into two segments, namely the portio or ectocervix, that area covered by stratified squamous epithelium, and the endocervix, lined by high columnar mucus-secreting elements.

The ectocervix is derived from the invading epithelium of the urogenital sinus or possibly the vaginal plate epithelium of the united mesonephric ducts. The endocervix is of paramesonephric origin. Embryologically there is a definable secretory activity in the endocervical glands during late embryonic life. In addition to the epithelial elements, there is a very active stromal component, particularly beneath the stratified squamous epithelium of the Mullerian tubercle. There are two clearly defined types of cervical epithelia.

I. The pars vaginalis protruding into the vagina is lined by stratified squamous non-keratinising epithelium similar to that lining the vagina. The stratified epithelium normally does not demonstrate cornification, although if the cervix is prolapsed, it may become keratinised and skin-like.

Cartier (1977) described the squamous epithelium of the ectocervix. It measures about 0.5 mm thick. It is separated from the underlying connective tissue by reticular basement membrane. Stromal papillae project into the epithelium, not extending beyond its deep third. The epithelium includes 15 to 20 layers of cells, the superficial of which undergo maturation from the deep layers towards the surface, characterised