بسم الله الرحمن الرحيم

A STUDY OF THE INCIDENCE OF CERVICAL EROSION IN PILL-USERS AND WOMEN WITH CONTRACEPTIVE DEVICES

THESIS
SUBMITTED IN PARTIAL FULFILMENT
OF MASTER DEGREE IN OBSTETRICS &
GYNAECOLOGY

BY

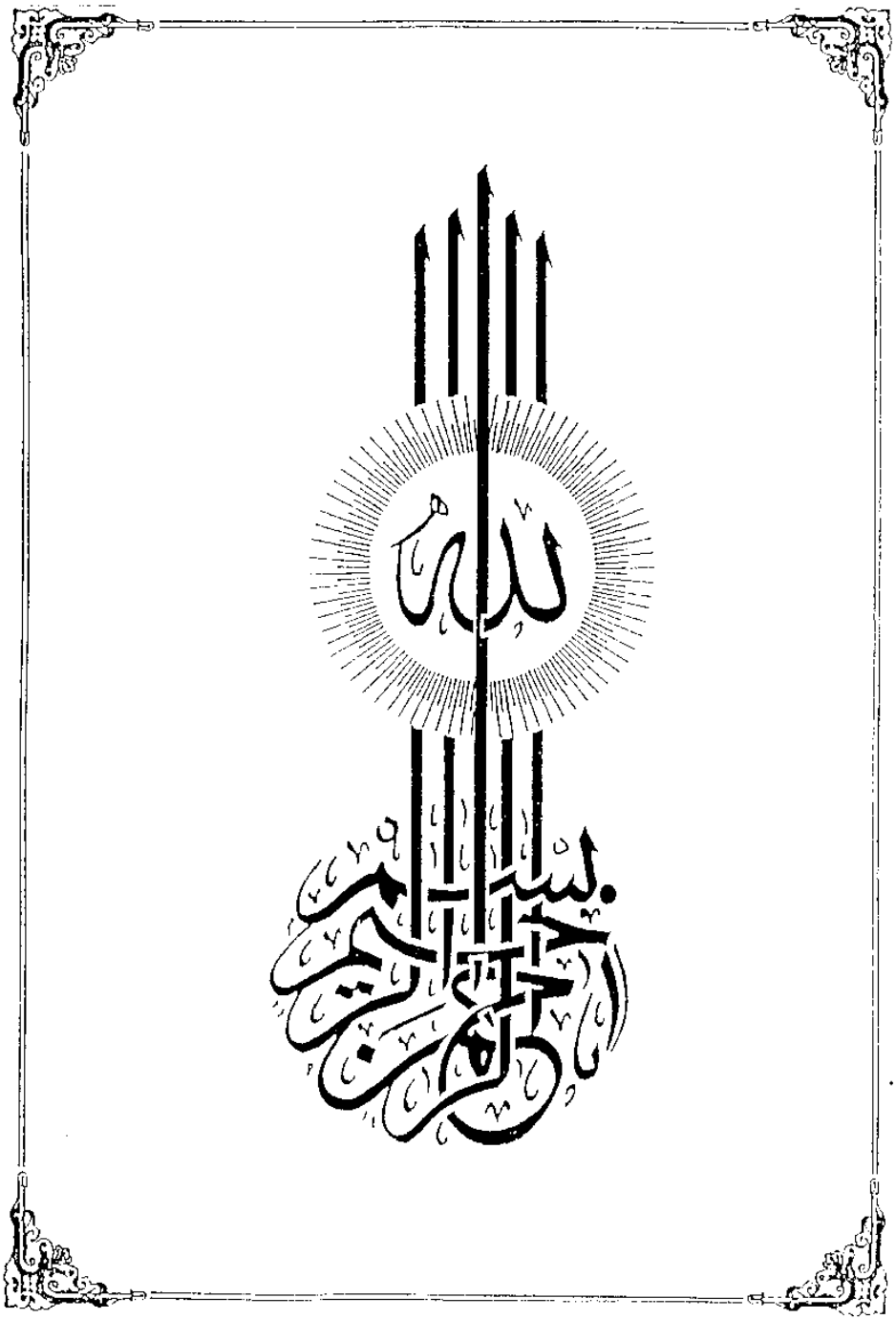
DR. RAGAA MOHAMED HATEM

UNDER SUPERVISION
PROF. DR. M. FAROUK FIKRY

AND
DR. SOBHI KHALIL ABO LOUZ

AIN-SHAMS UNIVERSITY
FACULTY OF MEDICINE
CAIRO EGYPT.

1983



ACKNOWLEDGEMENT

I wish to express my sincere thanks and gratitude to Professor Farouk Fikry for his kind advise, guidance and strict supervision throught the work.

I would like to express my gratefulness for Dr. Sobhi Khalil Abo Louz for his great assistance, cooperation and the interest he offered in preparing this thesis.

I am also very grateful for the staff of Cytological Department for the great effort they offered for me and for all those who aided me in the preparation of this thesis.

TABLE OF CONTENTS

INTRODUCTION

Contraception is now recognised as having the greatest importance in the field of preventive medicine, being essential to the health and welfare of individuals and whole communities. The most common and widespread methods in its practice are the contraceptive pills and the use of I.U.C.Ds.

At the same time cervical erosion is a common lesion detected in our out -patient clinics, that it seems to be the commonest among the gynaecological troubles. So it is essential to search for the related causes that can lead to increase its incidence.

Of these causes it was and still is - postulated that cervical chronic infection operating directly - or by altering the vaginal pH and bathing the cervix in some histochemical changes that lead to erosion.

At the same time it has been already settled that there is a definite relation between hormonal factors as by using the pills (Ober et al., 1958), or long - acting progesterone, oestrogen, or the high parity, incriminated in the aetiology of erosions, and

associated with abnormal cervical smears. Meanwhile the use of I.U.C.Ds can cause direct injury and ulceration of cervical tissues if its appliances have an intracervical component, as seen by cervical inspection and smears (Jeffcoate).

Accordingly, this study was done to review the correlation between the use of pills and I.U.C.Ds and the incidence of cervical erosion, with a review to the pathology and cytology of the erosion.

A HISTORICAL VIEW

Cervical erosion is a term used to describe essentially benign and physiological appearances of cervix.

The term was first used by Bennett in (1850), then by Churchill in (1857), and later by Ruge and Veit in (1878), all of them offered various suggestions for its existence. Their theories centred either on the actual maceration of the squamous epithelium with its replacement by regenerating columnar or cuboidal cells as the basis for the erosion, or the presence of the lesion as a direct extension of a congenital state (Fishel 1880).

Ruge and Veit (1878) considered that the erosive effect is a result of pH changes in the vagina and the consequent increase in the pathogenecity of the vaginal flora, and they were the first to draw the attention to the histology of the cervical erosion.

Fischel at 1880 introduced the term congenital erosion and denoted that the lesion is present in early

years of life starting from birth, he described congenital erosion as characterised by diffuse patches of endocervical epithelium protruding from the canal beyond the squamo - columnar - junction.

Williams (1888) put forward various views concerning cervical erosion.

Meyer (1910, 1930) insisted that the actual loss of squamous epithelium occurred as a result of the destructive effect of post-abortal and puerperal exudates. Columnar epithelium grew in to cover the denuded area which, at a later stage, was replaced by another ingrowth of squamous epithelium from the portio. Reinfection reversed this healing process and resulted in persistence of the erosion. This theory held its place for about 50 years.

Meyer and many pathologists after him (Auerbach and Pund 1945), Howard Erickson and Stoddard 1951, Rosenthal and Hellmann (1952) believed that primitive endodermal cells present in relation to the columnar epithelium possessed the potency to develop squamous elements are called"Reserve Cells" (Howard, Erickson and Stoddard 1951), they exist between the columnar cells and the basement membrane and are a

constituent of most cervices. The major point against this theory is that proliferation of reserve cells and squamous metaplasia commonly occur after cervical cauterisation (Reid, Singer and Coppleson 1967), a process which would destroy any previously existing inclusion of reserve cells.

Humperl and Koufman (1959) were unable to find the primary defect in the squamous epithelium suggested by the Myerian protagonists. They believed that the Sprouting of glands which burrow through the cervical stroma was highly unlikely.

Fluhman (1961) show three dimensional models for the endocervical mucosa, and its composition of long clefts with tunnels branching from them, rather than racemose glands with round mouths, this situation make it impossible for basal cells to bridge. Thus the regeneration that follows cervical electrocauterization suggests an in situ epithelial transformation rather than a surface migratory mechanism (Reid, Singer and Coppleson). This theory brought about the recent explanations for the causes of cervical erosion.

Definitions :

A cervical erosion is a condition in which the squamous epithelium covering the vaginal aspect of the cervix is replaced by columnar epithelium. It is not an area denuded of epithelium as the name implies. An erosion has a bright red appearance with a clearly defined edge; the colour being explained by underlying vascular tissue showing through a thin epithelium. Some assume that these signs are indicative of a chronic infection which precedes and causes the erosion. However, the inflamatory process may also be secondary to the erosion as the columnar epithelium have a less power of resistance to infection than the normal stratified covering.

An erosion is not a static condition and the line of demarcation between the two types of epithelium moves to and from the external os.

Ober and Hamperl in Germany, together with Coppleson and Reid in Australia, haverecently shown that erosion is a dynamic behaviour of the transformation zone and and the squamo-columnar junction. In pregnancy and adolescence the endocervical epithelium becomes everted and occupies a relative ectocervical position, a process

most likely oestrogen-induced and dependent. After the menopause a form of retraction or shrinkage occurs with a diminution of the exposed area of the transformation zone.

As it would appear, there is no loss of surface epithelium as the term erosion implies. Accordingly this term would seem inadequate, and other terms have been put forward, as "Pseudoerosion of the cervix" by Fluhmann (1961). Colposcopic studies performed over the last 20 years should allow us to replace the concept of cervical erosion by squamous metaplasia of the transformat. zone (Jordan and Singer 1976).

The term congenital erosion introduced by Fischel (1880) is considered later on as an early stage in the development of an acquired erosion, Fluhman (1961).

CHAPTER I

THE CERVIX

ANATOMY OF CERVIX

The uterus is a pear-shaped, thick-walled muscular organ : 3 inches long, 2 inches wide and 1 inch thick.

It is divided into fundus, body and cervix, the fundus and body form the upper 2 inches, the cervix forms the lower inch.

The cervix is marked from the body by a constriction called the isthmus. The cervix is narrower and more cylindrical than the body. It is freely movable than the body due to its relationships.

The long axis of the uterus as a whole presents with its concavity forwards i.e. anteflexed. When the bladder is empty the long axis of the cervix meets the long axis of the vagina at an angle which is open forwards and downwards, and the whole uterus is therefore turned forwards on the vagina, or anteverted.

The cervix projects through the anterior wall of the vagina, which divides it into an upper,

supravaginal portion, and a lower, vaginal portion.

The supravaginal portion is separated in front from the bladder by cellular tissue (parametrium), which extends also on to the sides of the cervix, and laterally between the layers of the broad ligaments. The uterine arteries reach the margins of the cervix in this tissue, while on each side the ureter runs downwards and forwards in it at a distance of about 2 cm from the cervix. Posteriorly the supravaginal cervix is covered with peritoneum, which is prolonged below on to the posterior vaginal wall, whence to the rectum by forming the recto-uterine pouch.

The vaginal portion of the cervix projects into the anterior wall of the vagina between the vaginal fornices. On its caudal extremity there is the small, circular apperture termed the external os, through which the cavity of the cervix communicates with that of the vagina. In women who have born children the external os is bounded by two lips, an anterior and a posterior, of which the anterior is the shorter and thicker, although, on account of the slope of the cervix, it projects lower than the posterior. Normally both lips are in contact with the posterior vaginal wall.

The canal of the cervix is somewhat fusiform, flattened from before backwards and broader at the middle than at the ends. It communicates above, through the internal os, with the cavity of the body, and below, through the external os, with the vaginal cavity. A longitudinal ridge is present on both the anterior wall and the posterior wall of the canal and from each of these ridges a number of small oblique columns, called the palmate folds, proceed, giving the appearance of branches from the stem of a tree; thus they are called arbor vitae. The folds on the two walls are not opposed, but fit between one another so as to close the cervical canal.

According to H. Stieve the upper third or less of the cervix, which has been termed the isthmus, presents certain features which differentiate it from the rest of cervix.

(1) In the non-pregnant uterus it undergoes changes associated with menstruation similar to, but less pronounced than those which occur in the body of uterus.

(b) From the second month of pregnancy it is gradually taken up into the body of the uterus and