Evaluation of the Role of Hysteroscopy Prior to Laparotomy in Management of Intrauterine Lesions

THESIS

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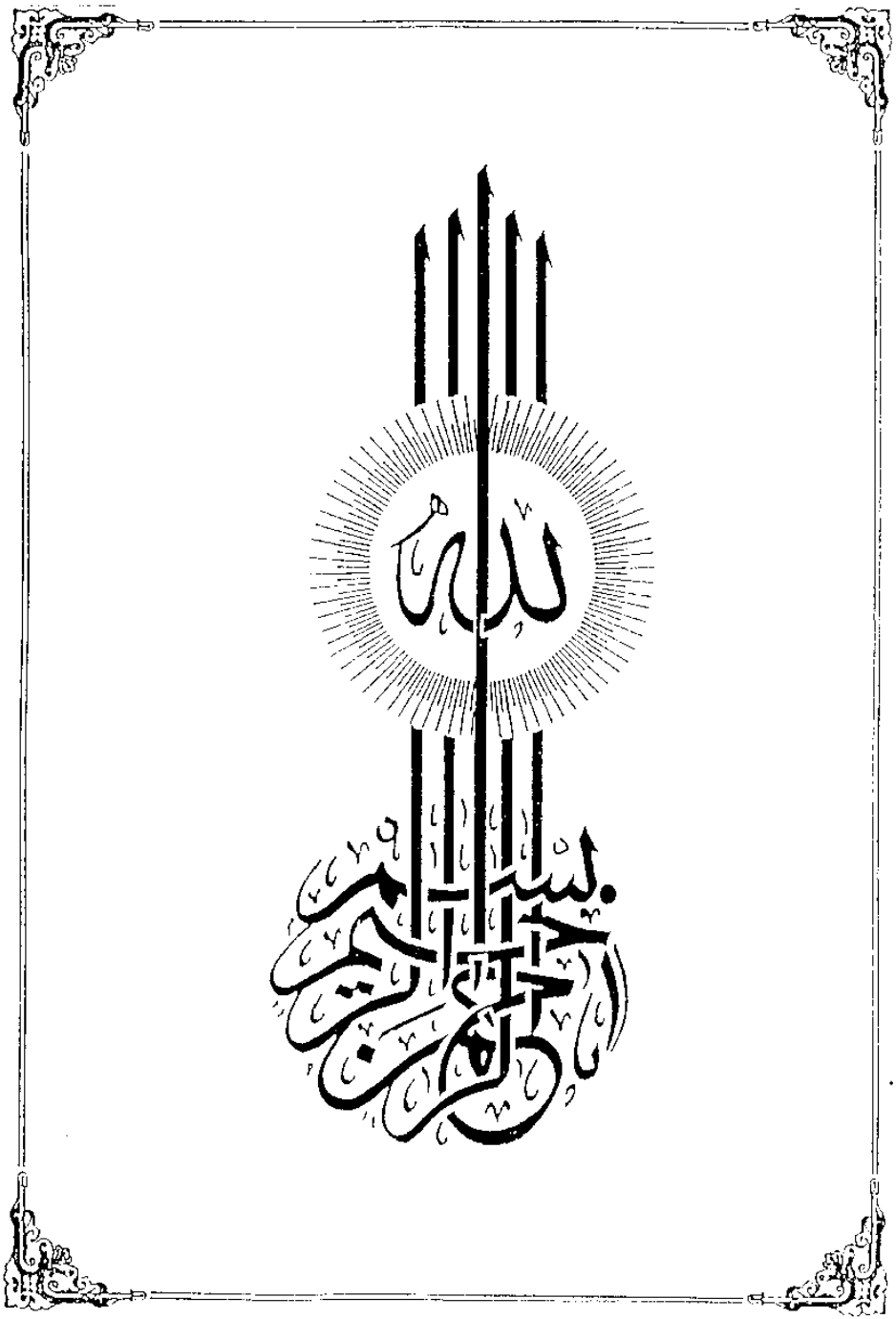
بسم الله الرحمن الرحيم



To The Memory Of My Mother,
To My Father.

Aknowledgment

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INTRODUCTION

INTRODUCTION

The gynecologist employes a number of ancillary techniques in defining variations from the normal pelvic anatomy. Diagnostic accuracy is augmented by a wide range of external and invasive procedures applying telescopic, radiologic, sonographic, and cell sampling methodology (Weingold, 1983).

Since Nitze devised the cystoscope in 1879 most of the accessible cavities and passages of the body have been explored by endoscopic means (Seymour, 1926).

The recent development of sophisticated optic systems providing broader viewing angles, finer resolution and magnification, and significantly improved fiberoptic lighting sources has rapidly advanced the endoscopic aspects of gynecologic diagnosis. (Weingold, 1983).

Interestingly, no single medical group performs either the variety or the volume of endoscopic procedures undertaken by practitioners within our speciality (Baggish, 1983).

Hysteroscopy, the technique of intrauterine visualization, is accepted in clinical gynecology for the diagnosis and treatment of several conditions, which benifit from its direct visual approach and the easy identification of pathology whithin the uterine cavity. The uterus, the small, hollow organ that, over the years, has been sounded with probes, scraped with curettes, filled with materials for X rays and explored visually only after its removal, has

preplexed endoscopists ever since hysteroscopy was first developed (Valle, 1977).

Hysteroscopy in the past has been no more than a way to confirm the existance, location, and extent of intrauterine lesions, although experience accumulated in many cases of endometrial disorders has made it possible to deduce the pathology from the external appearance of the lesion seen by recent techniques of hysteroscopy (Sugimoto, 1975).

The possibility of direct visualization of the uterine cavity has introduced a new era in gynecologic endoscopy. The topogrphy of the uterine interior can now be studied directly and small submucous myomas, polyps, and malformations can be detected (Valle and Sciarra, 1975).

As a diagnostic technique, hysteroscopy affords accuracy in detecting intrauterine conditions which may not be revealed by traditional methods of exploration. As an operative technique, hysteroscopy increases the precision of surgery and minimizes trauma to the endometrial lining, and may, on some occasions, preclude major surgical intervention. (Valle and Sciarra, 1979).

Perhaps, the time has come for the curette to be used selectively rather than simply as a tool to scrap the entire cavity haphazardly in hopes of finding the cause of bleeding (Goldrath and Sherman, 1985).

Although hysteroscopy is a new procedure to most gynecologists, it is a procedure that is readily learned in a short period of time (Israel and March, 1984).

Hysteroscopy is gaining use and acceptance in daily gynecologic practice. It should be remembered, however, that this technique is not the solution to all the problems within the uterine cavity and cannot replace the more traditional methods of diagnosis and therapy. Intrauterine visualization should be considered a complementary method and used as such in order to achieve its full benifit and to avoid unnecessary failures, misapplications and complications.(Valle, 1977).

Aim of the work:

Assessment of the diagnostic accuracy of hysteroscopy prior to laparotomy for any intrauterine pathological condition (Comparing it to ultrasonography whenever possible).

REVIEW OF LITERATURE

Optical physics with emphasis on endoscopes (Gardner, 1983).

The function of an endoscope is to present an image of the interior of a cavity or of an object exactly as would be seen if viewed directly, except for a change of scale due to magnification.

Optical properties of endoscopes that are of importance and interest to users are magnification, resolution of details, depth of focus, and color rendition of the object.

The most basic meaning of visual magnification relates to the apparent size of an object as it is observed by the eye. The normal eye can focus on objects at distances from infinity to the near point, usually taken to be 250 mm.

For the case of near objects as viewed by an endoscope, the viewing distance (the distance of the final image produced by the endoscope to the eye) adopted is 250 mm. Thus the visual magnification is defined as the ratio of image size to object size, when the image is positioned 250 mm from the eye.

Visual resolution defines the ability of a viewer to distinguish fine detail in an object. The resolution of the average normal eye is approximately 0.10 mm at 250 mm.

Care must be taken to distinguish between resolution and the ability to detect the presence of an object. Usually it is possible to detect the presence of an object, even though its size or shape can not be resolved.

The color rendition of the object depends on the chromatic transmission of the imaging and illuminating optics, as well as the spectral output of the illuminating lamp.

Historical background

The development of hysteroscopy, exactly like that of other endoscopic examination methods, is closely related to the development of the instruments for the obsrvations of other body cavities (Lindemann, 1973).

The history of endoscopy realy go back to the early years of the 19th century. In 1805, Bozzini constructed a device, called a light conductor, that enabled him to inspect various passages and body cavities.

In 1821, the French physician, P.S. Segals ,introduced to the Academy of Science his "speculum uterocystique" a hysteroscopic device based on the principles of Bozzini invention (Van der Pas, 1983).

In 1853, Desormeaux, sometimes reffered to as the father of endoscopy, presented the first model of a workable cystoscope to the French Academy of Medicine. (Sciarra and Valle, 1977).

Pantaleoni, in 1869, was the first to perform hysteroscopy in a living human being. An endometrial polypous growth in a 60-year-old woman was chemically cauterized after endoscopic visualization and localization. (Valle and Sciarra, 1975).

Ten years later, Nitze introduced a cystoscope with illumination provided by a platinum loop which could deliver light distally to the bladder. This endoscope was the prototype for the present day hysteroscope.

In 1908, Davis, described a new technique of endoscopy of the uterus, in which he employed an instrument consisting of a sheath into which fitted the cystoscope closed at the far end by a glass crystal, and containing near it an incandescent lamp. By enclosing the lamp, he believed he avoided blurring of the visual field due to bleeding following the introduction of the instrument but nothing was done with this instrument. (Lindemann, 1973).

Ingenious modification of early endoscopes were introduced to overcome cumbersome uterine bleeding and to maintain adequate uterine distention for panoramic view (Valle, 1983).

Rubin (1925) described uterine endoscopy with the aid of uterine insufflation. Insufflation as employed for the tubal patency test was used in twelve cases, a syringe in twenty-nine cases.

Seymour (1926) added two lateral channels to the endoscope, through which blood and mucus could be continually aspirated.

In subsequent years, however, interest was focused particularly on the irrigating systems by German and French physicians who parsued hysteroscopy as a valuable adjunct in diagnosis (Valle, 1983).

Norment devoted more than 30 years to desining new instruments for uterine visualization. In 1956, he utilized a transparent plastic tube fitting sungly over the optical instrument for visualization. (Valle and Sciarra, 1979).