Introduction

Cervical neoplasia represents an insidious hazard to women of all ages. On a worldwide basis, cervical cancer is the second most frequent malignancy in women. Adverse effects of cervical cancer and its treatment may range from infertility and sterility to untimely death. Cervical cancer screening programs have decreased the incidence of cervical cancer substantially by identifying women with premalignant cervical disease while it is still amenable to conservative management.

Colposcopy is the examination of the lower genital tract in women by use of a low-power microscope. As we know it today, the colposcope is a binocular or monocular microscope on a stand that enables an examiner to visualize the epithelium of the lower genital tract under magnification and bright illumination. Although colposcopy was originally described as a screening procedure, the introduction of cytologic techniques by Papanicolaou in the 1940s led to its development mainly as a secondary investigation to evaluate an abnormal or unsatisfactory cervical smear. The modern colposcopic method along with advances in cervical cytology has dramatically improved the evaluation and treatment of lower genital tract disease.

Colposcopy offers advantages over more invasive diagnostic tests. Diagnoses can be made and patients treated in an ambulatory setting without general anesthesia. The minimally invasive nature of colposcopy preserves the cervix for future childbirth. This is a particularly important feature in light of the increasing prevalence of young women with preinvasive forms of cervical disease.

The purpose of colposcopy is to distinguish among noninvasive, preinvasive, and invasive cervical neoplasia. This approach requires an understanding of the appearances of normal and abnormal lower genital tract epithelium and the ability to differentiate reliably between the two. The diagnosis is based on the evaluation of epithelial characteristics
of the cervix, as seen with the aid of the colposcope and various applied staining solutions. A thorough knowledge of the causative role of the human papilloma virus in cervical disease is required. The effective management of these patients relies on the clinician's ability to distinguish among invasive cancer, its precursors, and other conditions. Skill and experience are required for the performance of a complete and proper examination. Once it has been carried out, therapy may be individualized based on the nature, size, and distribution of the patient's lesion (Ferris).

**Historical overview**

The history of colposcopy dates back to 1924, when Hinselmann, a German physician in Hamburg, was asked to write the chapter "Etiology, Symptoms and Diagnosis of Uterine Cancer" in the third edition of the Handbook of Gynecology (edited by Veit and Stoeckel). Hinselmann's response to this challenge was truly remarkable! Confronted with the limitations of palpation and naked-eye examination in the early diagnosis of cervical cancer, he invented his own optical aid: the colposcope. Click here for more information about Hinselmann and his work.

In the United States, as early as 1929, Levy described the need to study the genital tract with some degree of magnification. In 1931 Emmert wrote an article introducing the colposcope to North American physicians, and by 1932 the colposcopic technique was beginning to be used in a few centers. World War II created a 17-year hiatus in the development of colposcopy in the United States because dialogue between German and American colposcopists ceased.

The modern era of colposcopy began in 1953 when Bolten introduced modern colposcopy to the United States. Initially it served as a tool to identify women with asymptomatic early invasive disease. Subsequently, it has also helped physicians identify preinvasive squamous neoplasia of the cervix. At a meeting of the American College of Obstetricians and Gynecologists in Miami in 1964, a group of enthusiastic colposcopists identified the need for a colposcopy society. Thereafter, through the
dedicated efforts of many members of the society, various colposcopy courses were initiated.

In the past 20 to 30 years colposcopy has become the cornerstone of management in patients with abnormal cervical or vaginal cytologic findings. By 1977 an estimated 3000 gynecologists had been trained in colposcopy, many of whom were teaching in obstetrics and gynecology residency training programs. The American Society of Colposcopy and Cervical Pathology (the newer name of the original society) charged its education committee with developing a core curriculum for the teaching of colposcopy. Currently colposcopy is widely practiced by a variety of physicians and is part of standard training in many residency programs.

What future development might entail remains to be seen. At present colposcopy is serving and enhancing the health care of many patients (Torres, Burghardt).
Hinselmann stated in his book on colposcopy that "examination of the cervix and vagina with the unaided eye ....does not meet the demands of scientific appraisal and therefore requires use of magnification." He felt the imperative need to "provide an intense light source for the magnified image without sacrificing binocular vision." By 1925 he reported the construction of the first colposcope, which he described as "an instrument fulfilling these demands." Thus began a lifelong study of the cervix and the development of the terminology used to describe the various lesions he observed with the colposcope.

"For this purpose I have attached a light source to the Leitz binocular dissecting microscope. Using a longer working distance and intense illumination, the vagina and portio can be enlarged more than 3.5 times. According to the length of the vagina and the accessibility of the portio, these structures can be enlarged from 10.5 to 30 times. I have enjoyed using this equipment more and more in the last few months. It enables the study of all diseases of the vulva, vestibule, vagina and portio in a way which was not hitherto possible. I have attached the optical system to a stand which allows movement in every direction, and have also supplied a small screw for fine adjustment."

Before colposcopy a cervical tumor the size of a bird’s egg was regarded as early. After the invention of the colposcope, Hinselmann was able to state, "with regard to the so-called early cancers, we can now say that colposcopy enables detection of considerably earlier cases. Even a dot-like tumor should not escape detection. In principle we can detect lesions as small as one could care to think of" (Burghardt).
Bolten, the father of modern colposcopy in the United States, came from Germany and became a teaching fellow at the Jefferson Medical College in Philadelphia. He then moved to Louisiana State University School of Medicine in New Orleans in 1954 and established another colposcopy clinic, which has been in continuous operation to date.