Although there are many tests that effectively evaluate factors determining the origin of infertility, there are but a few ways to study the uterine cavity itself besides hysterosalpingography (HSG) and endometrial biopsy. These techniques are quite useful, but when endometrial pathology is suspected -- whether it be organic or functional -- direct visualisation of the uterine cavity, together with the traditional endometrial biopsy, provides much more specific information.

The ability to directly observe the cervical canal, the uterine cavity, and the tubal ostium with the patients on an ambulatory basis finds clinical application throughout gynaecology. The microhysteroscope of Hamou has made this concept a realistic possibility and thus has become an invaluable diagnostic aid. A major application of hysteroscopy has been in the evaluation of female infertility.

At the Gynaecological Endoscopic Centre in Florence, we have applied hysteroscopy to the study of female infertility in the following ways: to clarify uncertain aspects of HSG, particularly with regard to the diagnosis and treatment of endouterine adhesions; to assess anatomic and functional features of the uterotubal ostium; to establish and guide the groundwork for metroplasty and salpingoplasty; to differentiate the diagnosis of submucous myoma, endometrial polyps, and hyperplasia; and to assess the condition of the uterine cavity in case of repeated abortions.

Hysterosalpingography has obvious diagnostic limitations; dubious or erroneous results have been reported in 40% of the cases. On the other hand, the efficacy of
hysteroscopy becomes particularly evident in those cases where the HSG gives clear results\textsuperscript{3,4}. Our study shows that the uterine cavity is normal in 45\% of the cases, which is contrary to results given by HSG. Hysteroscopy allows one to clarify the findings of HSG, to show the exact pathology, and to establish the course of treatment.

There are no doubts about the utility of exact differential diagnosis between submucous myoma, endometrial hyperplasia, and polyps. Surgery is the treatment of choice in myoma, and hysteroscopy is irreplaceable in the treatment of polyps and focal hyperplasia of the intratubal ostium. In these latter cases, the diagnosis can only be considered with the classical tests, while the hysteroscope provides a better rationale for adequate treatment.

In the case of endouterine adhesions, hysteroscopy (by substituting direct vision for indirect HSG observation and blind surgical procedure) has become a major diagnostic and therapeutic tool. It has the ability to provide a panoramic as well as a close view with different magnification during the same examination. At 20X magnification, hysteroscopy reveals three different histologic types of adhesions: endometrial, myofibrous, and connective tissue adhesions. Endometrial adhesions are usually fragile, soft, and whitish in appearance; they are easily dissected. Myofibrous adhesions, on the other hand, require a more aggressive technique. At 60X magnification, those adhesions with less vascular tissue clearly indicate where to proceed with dissection. The connective tissue adhesions, which are greyish and dense, are the most difficult to dissect.

Among the patients we have operated on, normal menstrual function has returned in 87\% of the cases, and there was a pregnancy rate of 44\%. At 150X magnification, it is possible to visually follow the evolution and restoration of the endometrium and, thereby, to increase the chances of pregnancy.

Hysteroscopy permits the study and evaluation of anatomic and functional aspects of the uterotubal ostium. When the intramural part of the tube is functioning normally, increased distention with CO\textsubscript{2} allows us to observe tubal contractions. This finding confirms the theory of de Brux and Hafez\textsuperscript{5} concerning the existence of a sphincteric function to the circular and longitudinal organisation of the muscular fibres at the uterotubal junction. These contractions also can be considered as proof that the tube is functioning well. In pathological situations, however, or in premenopause, these contractions often do not occur.

The ability to study the tubal ostium in its smallest detail, using the various magnifications in the course of the examination, can demonstrate numerous types of pathology. During our study we have observed the presence of cornual polyps in 10 cases. On occasion, focal endometrial hyperplasia was responsible for an obstruction of the ostium. More frequently, post-inflammatory pathology of the ostium was observed in which these alterations changed the patency and the function of the tube, sometimes to the point of complete occlusion. In six cases, we have found extremely small ostia, although still patent, that probably were of congenital origin.