

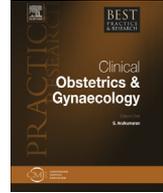


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New technologies and innovations in hysteroscopy



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Ambulatory services, with the performance of diagnostic and operative hysteroscopy as an outpatient or office procedure, are providing much of the stimulus for the development of devices that will offer women a better hysteroscopy experience. For the many women who are readily able to tolerate outpatient hysteroscopy, it offers significant advantages, as they can receive safe, efficient and effective assessment and treatment of abnormal uterine bleeding, with avoidance of the disadvantages of general anaesthesia and hospital admission. In addition, provision of such services is cost effective. Whilst the focus for the development of new devices has been the improvement of ambulatory hysteroscopy services, new instrumentation may be beneficial for hysteroscopy procedures in any setting. For ambulatory services, important goals are to reduce pain and the duration of procedures, and to enable the ready delivery of both diagnostic and therapeutic outpatient hysteroscopy. This article discusses innovations for both diagnosis and treatment. Much of the information available about these new devices has been obtained from the manufacturers or from published abstracts submitted for presentation at international meetings that have not been peer-reviewed. Some of the reported studies have been randomised controlled trials, others the results of early investigations.

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New devices for hysteroscopy

Imaging systems with readily portable cameras and light sources can be used in examination rooms that are not solely dedicated for hysteroscopy; they enable more flexible use of space and without the storage difficulties of bulky, conventional imaging stacks.

EndoSee™

The EndoSee™ device (CooperSurgical, Trumbull, CT, USA) is novel (Fig. 1). It is a handheld, battery-operated hysteroscopy system that consists of two main parts. The 'HandTower™' contains a small (3.5-inch diagonal) touch screen liquid crystal display (LCD) monitor, with video and control electronics and a rechargeable battery. It weighs 400 g; a charging cradle is provided. The hysteroscopes are single-use semi-rigid curved cannulas with a diameter of 15 F (4.5 mm) and a length of 287 mm. The lens, camera and light source are placed at the tip, and comprise a digital processing chip with a CMOS (complementary metal–oxide–semiconductor) sensor, as used in mobile phone and web cameras, with integrated LED (light emitting diode) dual light sources. The CMOS sensor has low static power consumption. The LED light provides a high-intensity light, but without significant heat production, which is important as it is placed inside the uterine cavity. There is a port at the proximal end of the cannula to which can be attached a syringe or inflow tubing for saline irrigation.

Results of observational studies using the device for diagnostic hysteroscopy, primarily in an office setting, were presented as open communications in the new instrumentation section of the AAGL Congress, 2013 [1–3]. It was reported that good-quality hysteroscopic images were obtained with the device and with minimal need for cervical dilatation. Munro et al. collected data for 24 women who underwent office diagnostic hysteroscopy with the device in one of nine medical centres in the USA [2]. Patient discomfort ranged from none to modest, insertion was generally easy, good visualisation was obtained and it was found to be easy to use. The findings of these investigators support use of the device in a non-specialised examination room, as it has the potential to replace the more usual bulky monitor, camera and light source equipment and without the need for sterilisation facilities.

Other cannulas for use with the HandTower™ may become available for endometrial biopsy and operative procedures, but these require further development [4]. The role of EndoSee™ in the United Kingdom has yet to be determined.

UBIPack GYN

The purpose of the UBIPack GYN (SoproComeg, La Ciotat cedex, France) is to provide a portable system for undertaking hysteroscopic procedures (Fig. 2). It consists of a one CCD (charge-coupled



Fig. 1. The EndoSee™ (CooperSurgical, Trumbull, CT, USA) hysteroscopic device consisting of a HandTower™ and hysteroscopic cannula, with the camera and light source contained sited within the tip.

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