Importance of Hysteroscopy in Infertility

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Dr. Hugo Verhoeven: “My name is Hugo Verhoeven, and I’m from the Center for Reproductive Medicine in Dusseldorf, Germany. I’m on the Editorial Board of the OBGYN.net, and I’m reporting from the Global Congress on Gynecologic Endoscopy in Orlando, Florida. It is a real pleasure for me today to introduce Brian Cohen, Clinical Professor at Southwest Medical School in Dallas. Brian, thank you for giving me the pleasure. I’ve known you about twenty-five years and I know you were one of the absolute pioneers in the field of endoscopy. Our topic for today will be the importance of hysteroscopy in infertility, and what has always fascinated me in my own country and in Europe was that so few gynecologists know about the importance of hysteroscopy and that so few are actually performing hysteroscopies in their infertile patients. What could be the reason for that?”

Dr. Brian Cohen: “I don’t know, I think the main issue may be our patients in the United States probably average 35-37 years, they may be a little older, and they may have had more time to accumulate some pathology that we will find the abnormalities with hysteroscopy in approximately 20%-25% of all our patients. What we’ll find is anything from the ones that it slipped by with a congenital ischemic, arcuate, or subseptate type uterus that may not have been seen on hysterosalpingography. Also, I think maybe in Europe you’re doing a lot more hysterosalpingography with a lot of experience in detail and far fewer gynecologists are doing hysterosalpingography nowadays in the United States which makes it even more important that hysteroscopy should occur in the infertile patient because commonly things will get missed in the uterus. Another really good example is surface adhesions - films of scar tissue that we may not see on hysterosalpingography or saline infusion sonography, particularly in the secondary fertility in the patient post-partum, post-abortal, or post-cesarean section. There could have been an inflammation and scar tissue that’s not going to be obvious on hysterosalpingogram. I think it’s particularly important with recurrent miscarriages that before we go on that we check that the uterus is okay and, of course, one can easily miss small polyps. I think the importance of operative hysteroscopy in the infertile patient is that we can deal with the problem at the time and, coincidentally, everyone forgets the value of hydrotubation. A hysteroscopy by coincidence is a major hydrotubation with approximately 100-150 ml of the saline or ringers going through those fallopian tubes, and I think this also has a therapeutic advantage in addition to the diagnostic side.”

Dr. Hugo Verhoeven: “Could it be that maybe there’s a lack of information and a lack of training?”

Dr. Brian Cohen: “That’s actually very interesting because I think the figure is approximately 15%
of all gynecologists, certainly in the United States, do office or general hysteroscopy so I think it would be more important for them to consider alternative modes. There’s been quite a wave of saline infusion sonography because there’s been a big drop in hysterosalpingograms and I guess you’re right, if more people were actually trained then they would be considering it because if it isn’t part of what you do, then you’re just not going to do it.”

Dr. Hugo Verhoeven: “It’s a little bit of a strange situation because you will agree that a diagnostic hysteroscopy is an easy and very short performance so let’s now go back to the future a little bit. What for you were the milestones in hysteroscopic diagnosis and treatments?”

Dr. Brian Cohen: “I think from the late seventies and early eighties most of us were kind of raised on carbon dioxide, insufflation, and hysteroscopy. We had to have special insufflators and one of the things that scared a lot of people off was the ignorance about special insufflators because, as we’re aware, hysteroscopic insufflators are very low volume and high pressure but very low volume was the key issue. So there were a few accidents throughout the world where people took high volume insufflators, which are predictable to laparoscopy, and we had embolic catastrophes. Now I think the advance of knowing that we could just use simple electrolyte solutions made a major difference in insuring safety for hysteroscopy. I think in terms of major advances was the better optics and smaller diameter hysteroscopes. Originally the hysteroscopes were as wide as 7 1/2 mm because they were modified not only from cystoscopes but also from laparoscopes. I think as the technology and optics have improved and we have much smaller diameter instruments, particularly in a liparous cervix because we’re speaking about infertile patients, the incidence has really gone up much higher. I think mainly the optics and the smaller diameter has given us an appreciation that we could use simple solutions and that made a big difference.”

Dr. Hugo Verhoeven: “What about the quality of the light source?”

Dr. Brian Cohen: “Absolutely, we kind of take things like that for granted and you’re absolutely right, the much better quality of light source which allowed us the optics through much smaller channels has really made a big difference. Then of course there’s the improvement with the video systems to much greater resolution which has also made it a lot easier, and of course the lighter cameras so we can still really feel what we’re doing as we do it.”

Dr. Hugo Verhoeven: “So before going to operative hysteroscopy, can we conclude that hysteroscopy today is an easy procedure and it can be performed without any anesthesia - at least that is what I’m doing in most of my patients - and it should be encouraged because as you said at the beginning, there are so many reasons for infertility that we can find in the uterus that hysteroscopy should be part of any screening of the infertile patients. It’s best combined I guess with a laparoscopy in patients where tubal patency and tubal pathology needs to be explored. Is that correct?”

Dr. Brian Cohen: “Right, I would agree. I think with the smaller hysteroscopes either with conscious sedation or local anesthesia that in fact, this can be done. Personally, I think it’s important that we use medications that just avoid and exclude vasovagal reactions. Just excluding that personal preference, I think, you’re absolutely right; it can be done as a simple office procedure diagnostically. I think operatively the world should have the patient with total analgesia, and maybe sometimes we debate on the extent of anesthetic requirement but I would agree that diagnostically with local anesthesia and in many cases no anesthesia a major place for diagnostic hysteroscopy is in the infertile patient.”

Dr. Hugo Verhoeven: “I think it makes no sense to talk about all the possibilities of hysteroscopic surgery because there’s so many new aspects in the last couple of years. What do you think is the most innovative new technique in hysteroscopic surgery in the last year or two?”

Dr. Brian Cohen: “Coming back to infertility, I think one of the areas where we’ve made big changes is we have a lot of hypoestrogenic patients with very small thin endometrium who may have had prolonged exposure to a hypoestrogenic state or birth control pills. Younger and younger women are put on more and more prolonged potent progestins, and we will see this mild fibrosis of the surface of the uterus. They may have had a bit of infection because of that state, and I think the issue of when they are not responding to estrogen therapy and having to actually use the hysteroscope as some have called it ‘plowing of the endometrium’ that these incisions subsequently release the endometrium back. With intensive estrogen therapy, I think, that is a major issue that we commonly forget about because we find that these patients are not doing well in terms of ovulation induction. But the big one has been those small and slightly larger and more significant fibroids that we can resect with resectoscopic hysteroscopy and remove, and also of course various other means of ablating these fibroids through the hystroscope makes a major difference. In the past even with laparotomy and transection of the uterus to take them out and do a transabdominal
myomectomy, that today is historic. That’s probably one of the major issues in the infertility world the major issue of those fibroids but equally important the major congenital anomalies that required major metroplasty that we can base the resect through the hysteroscope. That’s probably the major advance that is really obvious where it’s been picked up at hysterosonography or sonography or in fact hysterosalpingogram but even if there is laparoscopic monitoring, the ability to totally preserve the uterus and just do a transcervical, I think, is a major advance.”

Dr. Hugo Verhoeven: “So that’s the state of the art today. My last question is always the same, what are your dreams for the future in the field of hysteroscopy? What are your expectations and demands to the pharmaceutical companies and to the instrument companies? What do you expect will be the next milestone if there is a milestone?”

Dr. Brian Cohen: “First of all, I think everyday they are improving the safety in the manner in which we do these procedures in terms of the fluids and in terms of the type of fluid we use. Diagnostically, obviously one may be using gases but I think particular fluid measurements and the anesthetic requirements we’ve improved all the time like fluid flow and preventing problems. But in terms of the dreams of the future, maybe the scopes are going to get small enough that literally our concept of putting the isolated blastocyst right in the right place may be a simple trans-hysteroscopic event in the past. I know we just monitor sonographically and we think we’re doing a great job but it may be we can get even further than that and do something like that. I’m not really thinking of anything else right now, I think we just have to refine and disseminate what we’re doing right now and that would really be a major event.”

Dr. Hugo Verhoeven: “But the hysteroscope transfer will not be possible if you are using fluids so then we need to go back to CO2, and as always, the question is what is the influence of CO2 on the embryo?”

Dr. Brian Cohen: “If we recall with contact hysteroscopy there wasn’t any fluid on the go at all and maybe now with the improvement in optics we will have a very tiny contact hysteroscope without fluids other than your culture medium in the little chamber right at the end, and it will just release the micro culture medium with your blastocyst which in a magnified hysteroscope is similar to the hysterocolposcopy. Maybe that’s not quite outrageous.”

Dr. Hugo Verhoeven: “I share your expectations for the future. Brian, thank you very much for this interview, it’s been a real pleasure.”

Dr. Brian Cohen: “I really appreciate you having me, thank you very much.”

Dr. Hugo Verhoeven: “Thank you.”

Dr. Brian Cohen: “Thank you.”

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