Gasless Laparoscopy in Oncology

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Dr. Hugo Verhoeven: “Good afternoon, my name is Hugo Verhoeven, I am a member of the Editorial Board of OBGYN.net. I’m reporting from 9th Annual Congress of the International Society for Gynecologic Endoscopy at the Gold Coast in Queensland. It is now my special honor to interview Dr. Bernd Bojahr of the Department of Obstetrics and Gynecology of the University of Greifswald in Germany. His specialty is gasless endoscopy and the topic that we are going to discuss today is the use of gasless laparoscopy in oncology, so a very specialized item. My dear friend Bojahr, thank you very much for giving me the pleasure to interview you. What is important for our patients is the following question: how did you come to the idea to perform laparoscopy without using CO2-gass, especially in oncology? I would be very grateful if you could describe the differences between what you are doing and what is performed during traditional laparoscopy using carbon dioxide gas?”

Dr. Bernd Bojahr: “Thank you. A rapidly growing number of reports in the literature describe the use of operative laparoscopy in patients with gynecologic malignancies. Generally abdominal operations are not performed laparoscopically to obtain a better surgical result but to reduce the morbidity, the duration of hospitalization and recovery time associated with conventional surgery. The morbidity associated with conventional radical cancer operations is much higher than it is for surgery for benign disease. Potentially, therefore, the laparoscopic approach to gynecologic surgery is used to greatest advantage in the treatment of gynecologic malignancies. At our hospital we have established the gasless technique since September of 1995. Since that time we know that gasless laparoscopy combines all the advantages of the minimal invasive CO2 laparoscopy with the possibility to use conventional instruments. It means that during laparoscopic procedures we have a magnification of the operative field from five to seven times and we can use fine instruments. It is easy to identify and coagulate minor vessels and only small incisions are necessary. Due to the lack of a pneumoperitoneum you can use flexible valveless trocar sleeves. This makes it also easy to introduce several endoscopic instruments through one port, independent what diameter they have. You also can use conventional instruments, this makes it possible to make a quicker change of all the instruments because you don’t have valves in the trocars and so suction and rinsing can be performed without affecting the visibility. It means that for an operative active gynecologist, the gasless laparoscopy represents a new field of surgical activities, which does not require a great adaptation or learning phase since it is possible to perform the same surgical steps with the same instruments as in laparotomy. That’s why at our hospital we did not start with CO2 laparoscopy to treat cancer patients because we were not sure that we could achieve the same radicality as in radical abdominal operation. So we decided to start to combine the gasless endoscopic pelvic lymph node dissection with the radical vaginal hysterectomy. We performed this procedure in 23 cases, and we could remove an average of 43 lymph nodes. We compared this with our radical abdominal hysterectomies and for this method we could remove 44 lymph nodes. This means we had the same efficacy, but we had a shorter hospital stay, the patients wished to leave on the seventh day on average, it was less painful for the patients and the post-operative morbidity was less than for the abdominal approach.”

Dr. Hugo Verhoeven: “So the efficacy seems to be the same whether you perform laparotomy or gasless laparoscopy. Next thing is - you answered this already - what is the comfort for the patients? The hospital stay is shorter. What about the pain, that’s my next question, and do you have more or less bowel problems? The final thing is, of course, what about the safety. Do you have more complications? These are the things that I would like to hear from you now.”

Dr. Bernd Bojahr: “We have no greater complications, that means the complication rate from this
minimal invasive approach was significantly lower than for the abdominal approach. But there are several other important aspects. There are papers or reports which suggest that CO2 gas can promote tumor cell dissemination and there are also some reports which described that tumor implants developed at the abdominal wall trocar entry site due to the CO2 pneumoperitoneum. Clinical experiences, theoretical considerations, and the results of animal studies warn against the use of CO2 pneumoperitoneum in case of malignant tumors.”

**Dr. Hugo Verhoeven:** “That means that the gasless laparoscopy is safer as a laparoscopy performed with gas. What are you findings if you compare with laparotomy? You have the same overview but the risk, I think, that the patient has hematomas in the abdominal wall or infection is probably higher after laparotomy. Did you perform any compare?”

**Dr. Bernd Bojahr:** “Yes, the laparoscopic approach makes it much easier to identify vessels because you have a magnification of the operative field, and also in the area of the big vessels which are filled with blood. You can also use your finger and so you have a feeling for tissue and if the vessels, which are filled with blood, do not collapse as they do in CO2 laparoscopy, it allows them to be better isolated. This means, there are some technical advantages, but from the other side, the lack of pneumoperitoneum means that you don’t have CO2 as a promoting factor for the growth of tumor cells inside the abdominal cavity.”

**Dr. Hugo Verhoeven:** “That sounds quite promising. My question now is: why aren’t that many doctors using this technique? It is my understanding that only a minority is convinced that this technique is really a good technique or a good alternative.”

**Dr. Bernd Bojahr:** “Yes, I don’t understand it because we have many courses at our hospital and every doctor who visits us was impressed about the gasless approach. The equipment that I use is quite expensive and so maybe this is one reason why not more doctors are switching to this technique. Different companies are developing new systems and instruments for lifting the abdominal cavity.”

**Dr. Hugo Verhoeven:** “My final question is always the same, what about the future? What is your vision for the future in the field of gasless laparoscopy?”

**Dr. Bernd Bojahr:** “In oncology the quality of initial surgical treatment may decide about life or death and that’s why uncritical application of new technologies is not helpful for the patient. That is why we have to compare in the future the conventional methods with laparoscopic methods including the gasless laparoscopy in prospective studies. We need to improve laparoscopic methods and instruments to decrease the duration of the operation, and I think that in this way gasless laparoscopy, especially on the field of oncological pathology, will play an important role in the future.”

**Dr. Hugo Verhoeven:** “Thank you very much, it sounds very impressive.”

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