Argon Beam Coagulation Treatment of Endometriosis

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Hugo Verhoeven, MD: "Good morning, my name is Hugo Verhoeven and I'm from the Center for Reproductive Medicine in Dusseldorf, Germany. I'm on the Editorial Board for OBGYN.net, and today we are reporting from the 30th AAGL meeting in San Francisco, California. As always, it is a very great pleasure talking to Larry Demco from Calgary, Canada. Larry, we've known each other for quite a long time and we enjoy having fun together and visiting parts of the world but especially also doing innovative treatments for our patients. The topic for today would be peritoneal endometriosis and the treatment by the normal gynecologists so we are not going to talk about endometriosis in the hands of the highly specialized people or in the hands of the gurus. You told me before that in your country and also in the United States a lot of patients are visiting their doctors because of pain. They do a laparoscopy, they find endometriosis, and they start treating the endometriosis with different techniques - some are doing medication, others are doing surgery. What are most of the doctors offering their patients now as the first step treatment for endometriosis?"

Larry Demco, MD: "As endometriosis has been dealt with in the past, many people were doing diagnostic laparoscopy but with the confines and the expense of the surgery the diagnostic laparoscopy has now been combined with a diagnostic and treatment laparoscopy at the same time. For the average gynecologist this meant identifying the lesion, be it black or red lesions, and using needlepoint cautery as the method of destroying just the lesion itself."

Hugo Verhoeven, MD: "What exactly is needlepoint cautery for our listeners and readers?"

Larry Demco, MD: "This is using the end of a sharp dissecting instrument and with monopolar cautery just touching the lesion or using the various needle probes with monopolar current or bipolar current to just vaporize or destroy the lesion on the surface of the peritoneum."

Hugo Verhoeven, MD: "We all know that unipolar in the past was a dangerous technique."

Larry Demco, MD: "This is what limited the average gynecologist. Teachings before showed that the endometriosis was suppose to be just where the lesion was, and this was usually a small lesion. This is how this technique evolved but this limited us as we came close to the ureter or underlying structures that the monopolar current would burn much deeper than we'd like and this exposed the patients to risks and complications of depth of burn. This also made the average gynecologist very meek in his treatment; he didn't want to go beyond the lesion or treat any other area that was not classical because of this risk. Recent teachings by Dr. Redwine and Dr. Martin have shown when they excised the endometriomas and looked at the actual normal peritoneum, they saw microscopic disease in this normal looking peritoneum. Patients that have been awake during their laparoscopy have also demonstrated that the pain can extend to 1 inch or 25 mm in every direction away from that lesion. So this has explained a lot on the need for reoccurring laparoscopies every two years or the pain coming back after six months because of the ineffective treatment."

Hugo Verhoeven, MD: "That is an important statement - most of the patients are maybe treated insufficiently during a routine laparoscopy because the techniques that the routine gynecologists are using are insufficient."

Larry Demco, MD: "That's correct."
Hugo Verhoeven, MD: "So you have something that's not new, you've done this for five or ten years. We're talking about the argon beam coagulator - what is that exactly?"

Larry Demco, MD: "This is not a laser, this is actually a device which sprays the...

Hugo Verhoeven, MD: "Did I say argon laser?"

Larry Demco, MD: "No, this is not a laser, it's a beam coagulator. A laser is very expensive; this is an attachment to the force four generator that creates a stream of inert gas - argon, to actually transmit the electrical current so that you can actually spray the electrical current on the surface without even touching the tissue. This makes treating with a needlepoint or fine probe to something almost like a magic marker where you can vaporize a large area. This is what we're looking at; we have to now treat a large area. So if you want to be able to treat a large area in a very short period of time, the argon beam allows that. The other advantage of the argon beam is that because you're not touching the tissue, the depth of burn is a lot less. You may say isn't this a disadvantage but some research has shown that about 80% of the endometriosis that we recognize is surface endometriosis rather than the deep endometriomas and very accessible to this type of treatment."

Hugo Verhoeven, MD: "It's superficial but efficient."

Larry Demco, MD: "That's correct. The other thing you may say is what about treatment near or over specific organs like the ureter and near the main vessels? The argon beam actually has a built in safety factor that if a flow of gas burns through the layer of peritoneum, the gas will go through the peritoneum and blow it up so it will actually lift the peritoneum off the underlining structures. An automatic reflex reaction is that you move away stopping the flow of gas and electricity so for the average gynecologist this is another safety factor and tells them immediately that they've gone beneath the depth of the peritoneum and the underlying structures are therefore at risk."

Hugo Verhoeven, MD: "So what is the learning curve?"

Larry Demco, MD: "It's very quick and you can actually learn it over one or two procedures. Actually, to teach my residents, I use a little mouse that I have on my monitor and I can identify the areas. The residents can just use the argon beam, and you can direct them from a distance away."

Hugo Verhoeven, MD: "What about complications?"

Larry Demco, MD: "Complications are rare in the sense of the safety factor that I mentioned but the other thing I've noticed through my twelve years of experience with the argon beam is that there's really a lack of adhesion formation especially if you are looking at infertility. I combined the use of just putting in some normal saline, 500 cc's, afterwards to keep the tissue moist and makes the adhesion formation in my experience actually a rare event."

Hugo Verhoeven, MD: "Each technique has contraindications, is there any contraindications for the argon beam coagulation for endometriosis?"

Larry Demco, MD: "No, I think the only thing is it's limited by its depth of burn, therefore, it's not really meant to treat deep endometriomas or big excisions. You may use it in big excisions to control the bleeding but I think that's where we're looking at other modalities such as excision or laser at that time."

Hugo Verhoeven, MD: "Are you doing this technique or treatment under local anesthesia or with conscious sedation?"

Larry Demco, MD: "Yes, we've done a study now with 23 patients in which the patient was awake and fully conscious during the treatment. They'd map where the pain associated with the endometriosis was and the argon beam could be used while the patient's awake. We'd treat and we could instantly tell if the treatment was effective, and the patient guided us to insure that the entire area that was painful and associated with the endometriosis was completely treated."
Hugo Verhoeven, MD: "So that would be optimal to combine the laparoscopy for pain mapping and if you then see the endometriosis to go immediately with the argon coagulator to treat what you see. It is evident that we are just talking here about peritoneal endometriosis and not on rectovaginal endometriosis or endometriomas. Those two sorts of variations of endometriosis have a complete different etiology and are of course not accessible for your laser. Some improvements maybe?"

Larry Demco, MD: "One of the biggest improvements is that the argon beam used to have a disposable hand piece in one which was approximately $125.00 for each case but now with the new developments they have a reusable one so that has markedly reduced the cost in the treatment with the argon beam."

Hugo Verhoeven, MD: "Larry, I learned quite a lot like always. Thank you very much for this talk."

Larry Demco, MD: "Thank you."

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