Dr. Larry Demco: "I'm here with Dr. Charles Koh who's one of the leading surgeons in laparoscopy, and the topic I'd like to talk about to Dr. Koh today is a newer technique or approach to the technique of tubal reversal using the laparoscopic technique. Dr. Koh, can you give us a little history of tubal reversal and it's current indications? Then go from taking us in the past history to the laparotomy type approach and its success rates, and then we'll talk a little bit about the success rates using the laparoscopic approach."

Dr. Charles Koh: "Thank you. Tubal reversal by laparotomy has been present for a long time and microsurgery using the microscope and smaller sutures was first introduced in 1977 by Victor Gomel and Robert Winston, and from that time on it became the gold standard. The success rates in terms of pregnancy before the microsurgical era - pre 1977 - was of the order of 20%-30%. After the microsurgical era, it exceeded 50% and as carried out today may have pregnancy rates as high as almost 90% if the follow-up is for up to 7 years."

Dr. Larry Demco: "What type of patient or what type of tubal ligation that a person had would have the best results for reversal?"

Dr. Charles Koh: "Generally the kind of ligation that leaves enough tubal length for reconstruction and less tissue damage. So basically, it refers to the mechanical rings that gives the best rate, and secondly, perhaps the Pomeroy-type operation particularly when done postpartum because at that time the tubes are very long. The worst results are seen with electrosurgical coagulation because the damage is often wide spread and there may not be adequate tubal length."

Dr. Larry Demco: "The tube is not a lineal diameter but more like a cone, does the difference in the diameters a particular indication and role in the success?"

Dr. Charles Koh: "Yes, that's why with mechanical occlusion that's performed at the isthmus, when one resects the blocked section, the tubal lumen while being small is very equivalent, and therefore, it's quite easy to put together and that has the highest success rate. When one has to join discrepant areas which is between the isthmus and the ampulla, and this usually is due to electrosurgical, then the preparation to make the lumen about the same size is quite difficult and success rates may be lower."

Dr. Larry Demco: "What time did the technique of doing the tubal reversal under laparoscopic approach surface?"

Dr. Charles Koh: "My group had the idea that with minimally invasive surgery becoming more and more popular, that laparotomy would be abandoned and with it all the good aspects of microsurgery. We already saw that with hydrosalpinx where very crude laparoscopic procedures were being done in preference to refined microsurgical technique just to avoid a laparotomy. So we started looking at whether it was possible to do true microsurgery through the laparoscope around 1990, and did our first few cases in 1992 which we presented at that time."

Dr. Larry Demco: "Is the laparoscopic approach a technique in which the aid of the enlargement with the laparoscopic enhancement with the monitors and in your hands improved our ability to reanastomose?"

Dr. Charles Koh: "Yes, in fact, magnification has a new meaning. We calculate magnification factor as the size of the image on the screen to the actual life size so based on that when you bring the laparoscope close to the tissue, you can get a magnification as much as 40 times. And that's enough to discern normal from abnormal tissue and during suturing with the actual operative microscope, the magnification is usually about 15-20 times so we can pull back on the laparoscope and get the same magnification for suturing, therefore, magnification is totally adequate."

Dr. Larry Demco: "How long does the tubal reversal take laparoscopically now?"
Dr. Charles Koh: "What we perform is sort of the classical technique but through the laparoscope using four sutures and using size 8-0 sutures, that does take a long learning curve. When we first started it took as long as 6 hours; right now we can do 2 tubes in about 1-1 ½ hours if it’s mid-tubal. Cornual operations take a little longer but this obviously takes at least a learning curve of 50 cases to get there."

Dr. Larry Demco: "What success rates are you having now in your own hands?"

Dr. Charles Koh: "We’re very pleased with the success rates because the pregnancies that occur seem to occur earlier. In our last breakdown with patients followed-up to 12 months, at 3 months we have a 35% pregnancy rate, at 6 months we have about a 60%, at 9 months it’s 70%, and 12 months about 77%. So a lot of the pregnancies occur early."

Dr. Larry Demco: "If a patient has had a tubal reversal, when do you say that the tubal reversal didn’t work?"

Dr. Charles Koh: "Because follow-up of patients particularly who come from out of town is quite difficult, we follow them up to one year. Pregnancies are still possible after that but I would say that depending on the patient’s age and so on, they also have to be properly worked up for infertility as one cannot presume that the sterilization is the sole cause of infertility. Therefore, ancillary measures like using clomiphene, insemination, or even using injectables may be pertinent after a year."

Dr. Larry Demco: "Thank you, Dr. Koh, I think you’ve added a little light for patients reading and looking at our site. I’d like to thank you very, very much again for your interview."

References:
MIMIS, The Milwaukee Institute of Minimally Invasive Surgery at Columbia St. Mary’s is the Midwest's first multi-specialty minimally invasive surgical center of excellence. Established in 1992 by a group of highly respected leaders in the field of minimally invasive surgery, the Institute grew out of a strong desire to provide the most innovative surgical care and treatment for patients. In addition to providing excellent patient care, physicians of the Milwaukee Institute of Minimally Invasive Surgery have published books and articles, reported their results in medical literature, and taught and lectured worldwide.
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