

40 YEARS

OF INTERVENTIONAL ERCP



STORIES FROM THE PIONEERS

VOLUME 1 OF 2



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OF INTERVENTIONAL ERCP

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VOLUME I

ERCP in Six Decades: From a Guest Editor



By Peter Cotton

I was delighted, for many reasons, to receive the invitation from friends at Cook to help celebrate the 40th anniversary of therapeutic ERCP—i.e., the first description of endoscopic sphincterotomy in Germany and Japan—and to do so by interviewing many of the earliest pioneers.

Firstly, I am pleased to do anything to remind the world of the huge contributions that Don Wilson made in this field. Seeing some of us making our own sphincterotomes and stents, he co-founded Wilson-Cook Medical and started a very successful business in North Carolina. He not only made the accessories that we needed (and often helped to design), but also nurtured the development of advanced endoscopy (especially ERCP) by supporting numerous pioneers, meetings and trainees. He made so many friends, and we all miss him.

Secondly, sphincterotomy for stones was truly a revolution in gastroenterology. Not without resistance in some quarters, it started the paradigm shift towards the new world of “minimally-invasive” treatments, making obsolete the previous standard of aggressive and dangerous surgery.

Thirdly, the opportunity to trawl and to revel in the memories of the earliest pioneers will not exist forever. The clock is ticking, and we have already lost Keichi Kawai, Michel Cremer, Jack Vennes and Steve Silvis.

Fourthly, the early 1970s was such a special time in which a relatively small band of young enthusiastic endoscopists shared their challenges and triumphs, and became close friends. It has been special for me to catch up and reminisce with many of them.

And, finally, everybody knows that old folks love to meander down memory lanes, dragging reluctant audiences behind them. I am no exception. When I do that with my “kids,” they stop me by saying “cardboard box,” a reference to a Monty Python sketch. “We lived in a cardboard box.” “Oh, luxury, lucky you, we used to dream

of having a cardboard box.” We will hear stories of homemade sphincterotomes and stents, which would fit into that cardboard box, or, at least, into my Dad’s leather attaché case.

Now to business. We started by attempting to identify the key ERCP players in the early and mid-1970s from memory and by dredging the early literature. In addition to those already mentioned, it was easy to count Meinhard Classen, Nib Soehendra and Laszlo Safrany (Germany); Aksel Kruse (Denmark); Claude Liguory (France); Joe Geenen, Dave Zimmon and Jerry Siegel (USA); Kees Huibregste (Netherlands); and perhaps Peter Cotton (then UK). Straightaway, I will apologize profusely to others that made big contributions that I have missed. And, of course, ERCP did not stop advancing in the 1970s. It has continued to develop in various ways ever since, and many prominent (and some less so) have contributed to it. It is a broad church.

It was gratifying that all of these prestigious individuals agreed to be interviewed, by telephone, and we are proud to present their (edited) comments, along with reference to some of their earliest publications, and some photographs. In addition, we persuaded Myriam Delhaye (and I) to write about Michel, Marty Freeman and Michael Shaw about Jack and Steve, and Masatsugu Nakajima shares his comments about his early years with Keichi Kawai.

We received so much material that we have had to split publication into two parts, and have chosen to avoid anxiety about perceived priority by placing the pioneers in alphabetical order. The fact that Meinhard Classen comes first is a happy coincidence, since he was certainly the primary pioneer in the West, and a mentor to all of us. We also intend to share select interviews in this series with some of the first and now prominent trainees of the pioneers, who can stand proudly on their shoulders.

It is difficult, indeed impossible, for current clinicians to imagine the world of pancreatic and biliary medicine in the early 1970s (shades of the cardboard box). There were no scans. Patients with deep jaundice were put to bed (at least in my hospital) and visited once a week. If they got better, it was clearly “medical.” If they got gradually worse, they underwent surgery, and often died. Pancreatic cancer was diagnosed by palpation, distortion of the duodenal loop



Peter Cotton with his ERCP teacher, Kazuei Ogoshi

on a barium meal and by laparotomy/autopsy. Chronic pancreatitis was recognized only if there was impressive calcification on a plain radiograph.

While attempts to cannulate the bile duct and pancreatic duct by endoscopy were reported first in USA by some surgeons (1), it was two gastroenterologists (and their colleagues) in Japan that showed that it was possible by working with industry to design more suitable instruments (2,3). Kasuei Ogoshi in Niigata Cancer Center worked with Olympus and Itaru Oi in Tokyo Women's Medical College worked with Machida.

For most western gastroenterologists, including myself, it was Dr. Oi's presentation at the 1970 World Congress in Copenhagen that opened our eyes to a whole new world. Within a year or two, with or without any significant training, our pioneers were cannulating with panache, and gleefully sharing their experiences in print and on platforms throughout the world. I was astonished by the arrival of what would become known as ERCP, but really gobsmacked by sphincterotomy. Happy to show bile duct stones to admiring audiences, I had no concept that we might be able to remove them. That vision came to Demling and Classen in Germany, and to Kawai, Nakajima and colleagues in Japan (4,5). They later recalled those early efforts in articles in *GI Endoscopy* in 2000 (6). It was such an obvious breakthrough that it was quickly accepted by the clinical community, with a few notable exceptions. Other treatments, such as stenting and balloon dilation, followed quickly, and the field has continued to evolve.



The name ERCP was approved by this working group at the Mexico City World Congress in 1974: Kazuei Ogoshi, Laszlo Safrany, Meinhard Classen, Tatsuzo Kasugai, Peter Cotton and Jack Vennes

One might mention a few milestones along the road. A meeting of early ERCPists in 1972 in Paris was stimulating and started lifelong friendships. The ASGE held a workshop in 1981 that explored many challenging issues (7). The term ERCP was approved first at the 1974 World Congress in Mexico City. The 10th anniversary of the first sphincterotomy was celebrated by a workshop hosted by Demling and Classen in Erlangen in 1983 with almost all of the world's top players. Another ASGE workshop in 1991 explored the complications of ERCP and set the definitions for future studies (8). The National Institute of Health in USA held an authoritative "state of the science" conference on ERCP in 2002. The main conclusion of the distinguished panel was that "there isn't much science"! (9) This did serve to stimulate better studies and provided some funding opportunities.



Peter Cotton, Meinhard Classen, Itaru Oi and Dick McCray (sitting) at a demonstration of ERCP in New York in 1975

Our plan for these publications is to celebrate the past, but one cannot resist a few comments about the present day. One problem for those, like me, who lived through those heady days, was that we got used to rather effortless success with whatever new came along. Stone extraction was great and stenting for malignant jaundice a no-brainer. Everything we touched seemed to turn to gold (in some cases, literally). We assumed that we would be equally triumphant when we applied our biliary tools to the pancreas. It has taken us a long time to realize that ERCP management of patients with pancreatitis is often of marginal benefit, not to mention sphincter of Oddi dysfunction.

A further problem is that we grew up and set our clinical compasses in days when surgery was dangerous and radiology primitive. Both specialties and better perioperative care have developed enormously and changed the agenda dramatically. In the old days, sending a patient to surgery was regretted and considered an admission of failure. Now, it is often the best approach. Only the most sophisticated research can unravel these knots, and only integrated multi-disciplinary teams can provide optimal care. It is high time to abandon the distinction between "medical" and "surgical" doctors that has persisted since the Middle Ages, and constrains our practice, an old plea of mine that continues to fall on deaf ears (10).

Finally, to safety and quality. ERCP is still causing a lot of complications, especially pancreatitis, despite our best techniques and prophylactics. It must be used judiciously. The fact that contaminated duodenoscopes are still causing outbreaks of severe nosocomial infections (40 years after we reported on one and recommended the use of glutaraldehyde) is embarrassing, and disastrous for those involved (11).

ERCP used to be an occasional tool for almost all gastroenterologists. With the diagnostic aspects of pancreatic and biliary disease well covered by less-invasive techniques, and many ERCP treatments becoming more complex, we need relatively few but well-trained ERCPists, with sufficient annual volumes to maintain and enhance their skills, working in a limited number of well-equipped and well-staffed centers (12).

We have come a long way, but there is still much to do. Today's young guns have plenty to aim at. We invite you to look forward to Volume 2 of this series, which will feature more dialogue with our pioneers. ■



References:

- 1 *Endoscopic cannulation of the ampulla of Vater: a preliminary report.* By William S. McCune, Paul E. Shorb, and Herbert Moscovitz, 1968. *Gastrointest Endosc.* 1988 May-Jun;34(3):278-80.
- 2 Oi I. *Fiberduodenoscopy and endoscopic pancreatocholangiography.* *Gastrointest Endosc.* 1970 Nov;17(2):59-62.
- 3 Ogoshi K, Hara Y. [Retrograde pancreato-cholangiography]. *Rinsho Hoshasen.* 1972 Jul;17(7):455-66. Review. Japanese.
- 4 Classen M, Demling L. [Endoscopic sphincterotomy of the papilla of Vater and extraction of stones from the choledochal duct (author's transl)]. *Dtsch Med Wochenschr.* 1974 Mar 15;99(11):496-7. German.
- 5 Kawai K, Akasaka Y, Murakami K, Tada M, Koli Y. *Endoscopic sphincterotomy of the ampulla of Vater.* *Gastrointest Endosc.* 1974 May;20(4):148-51.
- 6 *The beginnings of endoscopic sphincterotomy.* *Gastrointest Endosc.* 2000. 51 (5). 637-8.
- 7 Geenen JE, Vennes JA, Silvis SE. *Résumé of a seminar on endoscopic retrograde sphincterotomy (ERS).* *Gastrointest Endosc.* 1981 Feb;27(1):31-8.
- 8 Cotton PB, Lehman G, Vennes J, Geenen JE, Russell RC, Meyers WC, Liguory C, Nickl N. *Endoscopic sphincterotomy complications and their management: an attempt at consensus.* *Gastrointest Endosc.* 1991 May-Jun;37(3):383-93.
- 9 Cohen S, Bacon BR, Berlin JA, et al. *National Institutes of Health State-of-the-Science Conference Statement: ERCP for diagnosis and therapy, January 14-16, 2002.* *Gastrointest Endosc.* 2002. Dec;56(6):803-9.
- 10 Cotton PB. *Interventional gastroenterology (endoscopy) at the crossroads: a plea for restructuring in digestive diseases.* *Gastroenterology.* 1994 Jul;107(1):294-9.
- 11 Axon AT, Phillips I, Cotton PB, Avery SA. *Disinfection of gastrointestinal fibre endoscopes.* *Lancet.* 1974 Apr;1(7859):656-8.
- 12 Cotton PB. *Are low-volume ERCPists a problem in the United States? A plea to examine and improve ERCP practice-NOW.* *Gastrointest Endosc.* 2011 Jul;74(1):161-6.

Meinhard Classen

Meinhard Classen performed the first sphincterotomy with his mentor, Ludwig Demling, in Germany in 1973. From Erlangen and subsequent leadership positions in the Universities of Hamburg, Frankfurt and Munich, he has been the foremost digestive endoscopist of the modern age. He was general secretary of the World Organization for Digestive Endoscopy (OMED) from 1992-1998 and its president from 1998-2002. Now officially retired, living in Vienna and Kitzbuhel, he continues to stimulate and support the field by helping to establish training centers in many countries.

Peter Cotton: Meinhard, thank you so much for your time today. I do want to say at the beginning that you were an inspiration to me in the early days, like most other Western gastroenterologists who were struggling to get started with endoscopy. I think the first time we met was when the Keymed people in England took a group to Erlangen in 1969. I remember that visit so well because I and my colleagues in England were all struggling, with maybe one endoscope, and working in a closet somewhere with no nurses or any organization. In Erlangen we saw a very professional endoscopy unit with several rooms and nurses and equipment. We were stimulated and very much impressed.



Can we go back a little bit to you personally? Can you tell me where you grew up and where you graduated as a doctor and when?

Meinhard Classen: Sure. I grew up in the Rheinland near the Dutch border. My father had a huge practice as a general practitioner in the countryside. His image was so strong that all of his four children became medical doctors.

Cotton: That's very interesting because my father was also a general practitioner in the countryside, and I had the same inspiration as you. Where did you do your medical training?

Classen: My medical training was done in the University of Bonn mainly, which had a good reputation for medicine. Then I went to Freiburg, and also trained in Vienna.

Cotton: When did you decide on gastroenterology? How did that happen?



Meinhard Classen and Ludwig Demling chairing the workshop in Erlangen on the 10th anniversary of the first sphincterotomy

Classen: That happened because my first position was in Vienna in the city hospital, Rudolfstiftung. My chief there was a gastroenterologist and hepatologist. His name was Ernest Rissel. When I saw that he was not able to get a gastric biopsy tube, it was time to go back to Germany. He liked me very much. He told me when I left his department, "You should go to Demling," who was in Stuttgart at that time. He would become chairman of gastroenterology and internal medicine in Erlangen and this was almost like a miracle.

Later on, Professor Rissel spent his retirement in South Africa, in the Mount Nelson Hotel of Cape Town. He was sitting in the lobby all day. He sent me letters of what he observed there on the funny English governors, ladies and officers. He was a great man with an enormous sense of humor.

Cotton: Beautiful. Which year did you go there?

Classen: I spent one year in Vienna in his department and then, in 1963, I moved to the Stuttgart hospital where he was working, and Ludwig Demling had an enormous reputation already.

Cotton: Was Demling using semi-flexible scopes when you first met him?

Classen: Back in 1962, we had nothing else but a semi-flexible Schindler endoscope. His predecessor Norbert Henning wrote a wonderful book with drawings. He was the first to take color photographs of endoscopic examinations.

Cotton: You started with semi-flexible endoscopes yourself?



International stars at the 10th anniversary workshop

Classen: I started with the semi-flexible scope, yes. I think one year after that, we received a Hirshowitz gastroscope. The first did not have any controlled tip deflection. But I had a very inventive nurse. She said, “Why don’t you fix some wires to the tip and we pull them outside and then you can move the tip in the direction you wish.” That was a great idea. It was I think in ‘63, ‘64. After that we could see the cardia, antrum and pylorus.

Cotton: The first Olympus scopes? How did that happen?

Classen: The first Olympus instruments we saw were the gastro cameras, which we didn’t like at all, and we were the enemies against this movement in Germany. There was a group in Berlin and they were looking at these little strips of gastro camera photographs but did not wish to take biopsies and to involve the histopathologist.

Cotton: I remember, I went to a gastro camera symposium in Berlin in 1968. It was a Japanese name, the main person. I went there and I gave a talk on the importance of taking biopsies. It did not go over well.

Classen: In 1964, I’m pretty sure that at that time we were already using the Hirshowitz gastroscope and soon we also received the Olympus endoscopes for the stomach.

Cotton: That would be a GFB gastroscope, probably?

Classen: No, first the GTFA. Like a scissor, you could take gastro camera pictures although you could also see with an endoscopic optical system. They then came up with the GFB series with the possibility to take biopsies.

Cotton: Then, of course, the next big breakthrough was ERCP.

Classen: We thought that we should enter the duodenum all the time, whenever needed, and we should also have a look at the ampulla from the duodenum. We asked the Storz company in Germany to design a duodenoscope with a Bowden cable tip movement possibility and with an instrumentation channel for cannulation and taking biopsies. It didn’t happen, really. We succeeded one time to enter the papilla and showed a bad picture at the 1970 World Congress. There, we met Itaru Oi, who was, of course, the real number one at that time. We applied an enormous pressure on the Olympus people in Hamburg and they took care of it. I remember that in December 1970, we received actually, a JFB instrument. I succeeded in cannulating the papilla and filling some ducts—although not yet selectively—in 16 of the first 20 cases.

Cotton: Of course, they were not called the ERCPs then. Those were the first such procedures outside Japan. I was very stimulated and motivated by a lecture you gave in London, I think it was in 1970, at the Royal College of Physicians, on duodenoscopy.

Classen: Yes, we had a wonderful movie on that. I still have it somewhere. I remember this very well. You and Paul Salmon I think were the first to pick up the idea that the ERCP could be a phenomenal procedure with an enormous number of possibilities.

Cotton: I was lucky enough to go to Japan to work with Ogoshi in 1971 and that got me started. After a few years, I was doing a lot of ERCPs first at St. Thomas’ Hospital and then at Middlesex but it never occurred to me to take stones out. How did you have the vision to start sphincterotomy?

Classen: We had a working group made up by Ludwig Demling, Helmut Koch and myself. We were sitting together on a weekly basis. Koch said, “My God, it should be possible to get into the ducts by enlarging the papilla,” and all kinds of instruments were

made. We tried in animals with the snare used for polypectomy but it cut in two directions. This seemed to be uncontrollable but by covering one branch of the polypectomy snare, we thought it might be suitable. It was really very primitive but it worked quite well.

We used it in a human being for the first time in 1973, in a nurse who had been operated on due to biliary duct problems by the surgeons several times. She was a fantastic person and I explained to her in detail how we would proceed and she had a good understanding of the anatomy of the biliary system and the pancreatic duct. I told her, "I've never done it before, only in corpses and animals, but we have a good chance to cure you from this." It really worked. Cannulation was easy, the opening was easy to cannulate, although it was on the edge of a diverticulum. Unfortunately, she also had a stricture of a common bile duct under the hepatic duct due to the previous operations. Next day or some days later, we dilated this with a condom that our nurse constructed, consisting of the balloon and the tube. We dilated it but it didn't work for long.

Cotton: I remember you had a meeting in 1983 to celebrate the 10th anniversary, and the patient was in the audience.

Right at the beginning, was there resistance from your surgical colleagues?

Classen: No, we had a wonderful surgeon in our university, Reiner Hegemann. He was highly respected by his colleagues from other universities in Germany and he invited the most influential surgeons and some other German endoscopists to a meeting at Frankfurt airport. There was an enormous discussion because many of the surgeons didn't accept his argument and said, "No, that's our business. We have got to do it."

Finally, the end result was that we had no major resistance in Germany anymore. That was so helpful because we received admissions from other hospitals in Germany and several other colleagues, and several gastroenterologists dared to take over this method. That may have been the reason ERCP and sphincterotomy became popular in Germany relatively quickly.

Cotton: It was a very clever idea to have that meeting. If I remember correctly, you had some agreement that this would be done only in older people to begin with, was that right?

Classen: Yes, exactly. Only older people, and those with surgical risk.

Cotton: Okay. By older, they meant older than 50 or something?

Classen: I think it was older than 60. Nowadays, 60 is nothing.

Cotton: You really got everything started in Europe. We are enormously in your debt for that. We've all had wonderful careers doing these things, which are obviously of very substantial value. How long did you continue? I think you are retired now?

Classen: Yes, I am retired. Sixty-seven was my retirement time.

Cotton: I know that you've been active around the world in other ways, specifically with training centers. Would you like to tell us a little about that?

Classen: Yes, sure. On the occasion of the World Congress in Sydney in 1988, I was elected to become the Secretary General of the World Organization of Gastroenterology. In that position and subsequently, I have been travelling extensively to countries in Central Asia like Kazakhstan and also to many countries in Africa. I saw how gastroenterology was carried out in those countries and I thought it would be a good idea to establish training centers. The first person to share my view was Professor Issy Segal from the Baragwanath hospital in Soweto.

We started to collect money for this purpose. The chief of a big car company was my patient and he wrote to his factory director in Cape Town that he should give me a considerable sum so that we could start there.

The next one was in Morocco. I founded a training center there with Professor Naima Amrani in Rabat. She is a one-woman army, and the center is in good shape after 10 years. She is really wonderful and has trained about 1,000 doctors from the Francophone area in Central and Western Africa. She is really a great woman.

Cotton: Are these mainly endoscopy training centers or with broader focus?

Classen: No, it is gastroenterology, including hepatology and endoscopy. Now this has been taken over by the French. One of my French friends, whom I knew since many years, one day asked me, "How could you do that? You are a German. This is our area of influence here. That's our area." I said, "You have been too lazy in the last years, you have not recognized what was going on here, and shut your mouth now." He's still a good friend of mine.

Cotton: How many of those centers have you now?

Classen: One in Cairo and the last one in Dar es Salaam in Tanzania, and another one is being founded in Nepal. You won't believe how grateful these people are that they get modern medicine as much as possible. For instance, in Tanzania, a wonderful, large country with 40 million persons, has just one comprehensive cancer center but the only media to treat cancer is radiation because the cytostatic drugs are way too expensive.

Cotton: Those are wonderful legacies. I congratulate you. I want to turn to another topic, if I may. As you may know, these interviews are being sponsored and organized by Cook Medical, and we'd like to remember the tremendous contributions that Don Wilson made to endoscopy. I'm sure you had quite a lot to do with him.

Classen: We didn't have so much to do with him in terms of development of new instruments, but he was very generous in supporting our activities and he also brought new instruments to my co-workers, such as Professors Rosch, Hagenmuller and Frimberger. They were very excited in examining the new tools he provided and he supported our congress activities. Our personal relationship was exemplary, it was friendly.

Cotton: So, where are you now?

Classen: We are in Austria, we have a house in Kitzbühel for 20 years and we have an apartment in Vienna. It is a wonderful city.

Cotton: Sounds wonderful. What about your golf?

Classen: My golf is at the present time coming to a standstill, but not forever. In 10 days from now, I will be going to the Canary Islands and we'll play every day.

Cotton: Oh, excellent. Looking back at your fantastic career, are there things that you regret having not done or done?

Classen: Having not done, I must say, I was really sad that as a chief of the second largest department of internal medicine in Germany, the sum of beds was 170 when I took it over, and I brought it through a shrinking process so that finally I handed it over to my successor with 135 beds and a huge outpatient department. His successor has 70 beds, which he thinks is enough.

Cotton: I think we are enormously privileged to have been living and working through this period where medicine has advanced so much and people like you have contributed so greatly to it.

Classen: Thank you very much. I can give this compliment back to you. You were somebody who has really brought the modern gastroenterology, modern endoscopy to the world. You were everywhere. ■

References:

[Endoscopic sphincterotomy of the papilla of Vater and extraction of stones from the choledochal duct (author's transl)]. Classen M, Demling L. Dtsch Med Wochenschr. 1974 Mar 15;99(11):496-7. German.

Endoscopic papillotomy and removal of gall stones. Classen M, Safrany L. Br Med J. 1975 Nov 15;4(5993):371-4.

[Retrograde endoscopic diagnosis and therapy in diseases of the bile papillae and the bile ducts (author's transl)]. Classen M, Wurbs D. Langenbecks Arch Chir. 1977 Nov;345:261-6. German.

Endoscopic approach to papillary stenosis (PS). Classen M. Endoscopy. 1981 Jul;13(4):154-6.

Peter Cotton

Peter Cotton found his calling when flexible instruments became available in England in the late 1960s. He initiated pioneering endoscopy units at St. Thomas and the Middlesex Hospitals in London, brought ERCP back from Japan in 1971 and co-founded the British Society for Digestive Endoscopy. He moved to Duke University in the USA in 1986 and to the Medical University of South Carolina in 1994. Retired from clinical practice, he continues to influence the field through research and writing. He was interviewed by Bernie Laurence, whom Peter mentored. They are longtime colleagues and friends.

Bernard Laurence is a physician and gastroenterologist of fifty years standing. His major interests include procedural skills training, applications and development of GI endoscopy. He spent his formative professional years in Peter Cotton's Middlesex Hospital Unit. Laurence has a lifelong passion for sailing, and is an accomplished musician and shipwright.



Bernie Laurence

Bernie Laurence: It's really a great pleasure to be invited to talk to Peter Cotton—my mentor and colleague and friend of many years—about his role in developing therapeutic ERCP.

Peter is an internationally acclaimed gastroenterologist who was one of the pioneers and driving forces in advancing modern GI endoscopy. He's recognized not only for his contribution to the evolution of therapeutic endoscopy, but also for his role as a gifted and tireless teacher who gave generously of his skills and knowledge to generations of endoscopists throughout the world. As a medical scientist, Peter is particularly remembered as one who introduced rigor into the evaluation of the benefits and risks of procedural skills, particularly in gastroenterology.

Peter, perhaps we could hear about the path that led you to becoming, firstly, a medical doctor and, ultimately, a gastroenterologist and an expert in GI endoscopy.



St. Thomas' Hospital Medical School in its Victorian prime



At work at the Middlesex Hospital in 1984

I know that you were born in England in the throes of the Second World War, which is hardly an auspicious start. Would you tell us a little about your childhood and the things that influenced you into becoming a doctor, perhaps some insights into being a medical student and your specialist training?

Peter Cotton: Thanks very much, Bernie. It's a pleasure to talk to you as always. As you say, I grew up in the west of England. My dad was a country doctor and I spent a lot of time in my childhood traveling around with him, making house calls in various old cars that were always breaking down, and I certainly admired the respect in which he was held in the community. I went away to school because there weren't any reasonable schools nearby. I thought I was going to become some sort of a fancy scientist until I realized it was all too difficult...too much calculus and things like that.

I eventually decided that I would like to follow in my father's footsteps and become a physician and was able to get into Cambridge University and then St. Thomas Medical School to do that. My plan was somewhat vaguely to actually join my dad and his partner in country practice when I was finished, but my dad died suddenly before I qualified as a doctor and then I had to make a decision. His partner kindly asked whether he should keep the position open for me for a couple of years while I got a bit more training but I decided that, in fact, I should specialize.

It was for somewhat of a negative reason. I was overwhelmed by the amount of knowledge that was around in medicine and, of course, it's grown exponentially since then. I was just very nervous of being a generalist and having to know everything—or at least know what I didn't know—as every one came through the door. I took what was probably an easy way out, which was to focus and specialize. In terms of choosing a specialty at St. Thomas Hospital, that came about serendipitously, as things often do, because I found myself

working with a gentleman called Brian Creamer, who was an internist with a partial interest in gastroenterology.

He was one of the few people there that seemed to be interested in teaching and mentoring. He was very helpful to me and gave me some space in his lab to do some basic science to get an MD thesis. It was during that time that it became obvious to both of us that I was not going to make a basic scientist. So I was looking around for something else to do and came across the idea of endoscopy or gastroscopy, which was the only part of endoscopy that existed at that time. It was at that time in the late sixties that the first flexible gastroscopes become available, at least in the West.



Brian Creamer

They had been developed mainly in Japan, as you very well know, and I said, “Why don’t we get one of those and try it out?” Brian was smart enough to arrange that and so I got started doing endoscopy in 1968. There was virtually nobody else in England doing any so I basically taught myself along with a surgical colleague and it became rather popular, rather quickly. It’s become a very popular technique for diagnostic and therapeutic purposes. That’s how I got into endoscopy.

I liked to be able to do something useful. My dad was not only a doctor, he was actually also a bit of an engineer, and he taught me I should do things with my hands, so it worked out quite well when I was grasping an endoscope, and it became popular and we went on from there. There was no specialist or faculty member who was the slightest bit interested, so I was actually running an endoscopy service for several years as a “trainee,” which was slightly bizarre.

We made our own way and made our own mistakes along the way. It was at that time that I started to meet some of the other pioneers who we’re going to be talking to and about in this GI milestones series, like Meinhard Classen and Ludwig Demling. Visiting their unit in Germany, that you know well, in the late 1960s was a wake-up call because they already had a sophisticated endoscopy unit with nurses that knew what they were doing and lots of equipment. It was a real eye-opener that stimulated us to get things more organized.

Laurence: It certainly was a marvelous model, wasn’t it, of what endoscopy should be in many ways. They were innovative. They were great scientists and, as you say, they had all the supporting skills, which we now take for granted. It was a great time and very exciting. Peter, is that where you were first introduced to ERCP? ERCP is a rather unfortunate acronym, isn’t it, really? It sounds like “urp.”

Cotton: I invented it.

Laurence: Oh, you invented it, did you? It sounded a bit like a sort of rare Australian tree frog or something. Tell us, how did you decide on this name? What came before it?

Cotton: I’ll go back a little bit before that. The first time we heard about the idea of being able to get into the bile duct and the pancreas was at World Congress in Copenhagen in 1970. I

wasn’t there, but my mentor, Brian Creamer, was and he came back saying, “I can’t believe it. Some Japanese people showed pictures of the pancreas and the bile duct and since you seem to be keen on endoscopy, you better learn about that.”

We then applied to the British Cancer Research Campaign, got funds to buy an endoscope and, as an addendum, I said I need an airfare to Japan to go and learn how to do this because no one else was doing it. Happily, that was granted and I spent two weeks in Niigata, Japan with Kazuei Ogoshi. Ogoshi was working with the Olympus Company to develop a duodenoscope and Itaru Oi was working similarly with the Machida Company. I brought the procedure back to England in 1971 and started an ERCP service at St. Thomas Hospital, still officially a trainee.



The Middlesex Hospital, London

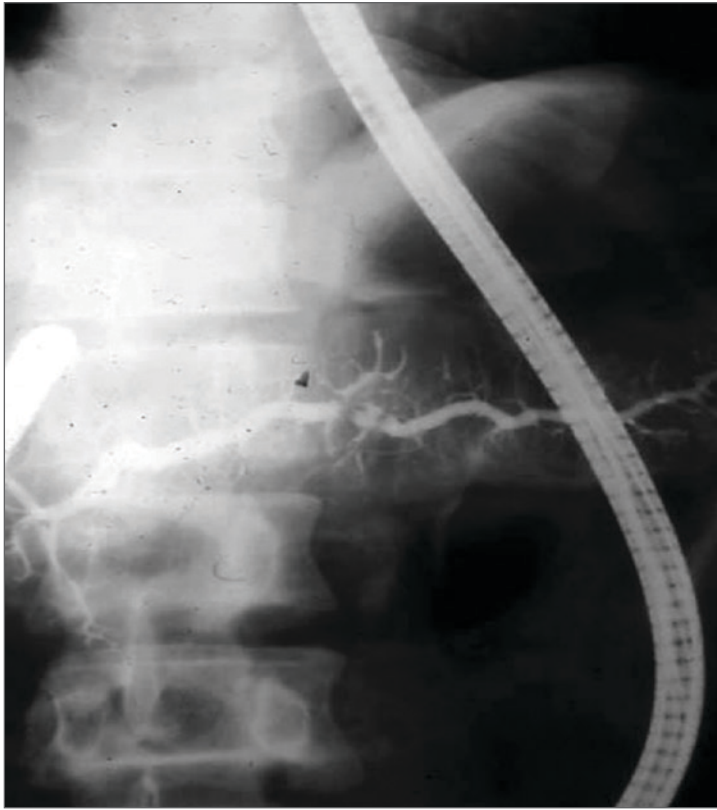
At that time the Japanese were calling it “endoscopic pancreato-cholangiography,” but it was all in Japanese, which we didn’t pronounce very well, so I eventually came up with “ERCP,” short for endoscopic retrograde cholangiopancreatography. That was approved subsequently at the Mexico City World Congress.

I eventually managed to get myself a faculty position at the Middlesex Hospital in 1973, which you will remember well.

Laurence: Yes, I do. Peter, tell us about the early days of ERCP because I was self-taught like you and there were certainly many hiccups along the way to becoming a safe and reliable ERCPist. Can you talk about those early days? I must say, I was concerned about what we were doing at that time.

Cotton: I guess I was very naïve. Looking back on it, I’m slightly embarrassed at some of the things we did, not least being the lack of appropriate reprocessing of the endoscopes. It didn’t really occur to us that these needed to be properly disinfected and I’m sure we caused some infections as a result, which are still occurring around the world, sadly. That was my major embarrassment looking back.

But the other thing I remember, as you would, is that the instruments in those days had a very small angle of view, about 50 degrees. Nowadays, it’s like 180 degrees when you get in the duodenum and you can see absolutely everything. You can’t miss anything. Back then, you had to really hunt and hunt and hunt



My first ERCP in Niigata, Japan, May 1971

to look for the papilla. And it took a while for us to learn how to straighten the scope because the Japanese didn't do that. They had the long scope position. Once we learned to straighten the scope, we found it a little bit easier. Then also I advised Olympus to put a bit of a back deflection on the lens, which they did to make it easier to see the papilla face on.

We didn't have, as you remember, too much in the way of accessories. There weren't any accessory companies. It was almost true that if your catheter got exhausted after 50 uses, you had to buy another duodenoscope to get another catheter. It's like getting a new Rolls Royce instead of emptying the ashtray. We also didn't know a great deal about sedation for the longer procedures like ERCP.

The x-ray issues were also important. I was fortunate to collaborate with some good radiologists. In those days, GI radiologists were interested in ERCP because they didn't have anything to do apart from barium studies. There had no scans to play with, which obviously consume them now, so they were very excited about ERCP and helping us try to interpret things. The x-ray equipment was often suboptimal. There was also another problem: the x-rays degraded the glass fibres in the early duodenoscopes; after maybe 100 procedures, everything went very yellow and dark and you had to replace the bundles. You remember that?

Laurence: Yeah, I do remember that, Peter. I'm also interested when you say that the radiologists were very supportive. I seem to remember at the Middlesex, you were in some sort of a bunker down under street level. Is that right? Do you remember that? With the old Marconi x-ray machine.

Cotton: Absolutely. That was the number one radiology room.

Laurence: Exactly, and when you took a film, there was this sort of flickering blue light, which spread around the room and the smell of ozone. Marconi would have been very proud of you, really. It was very developmental. It really was.

Cotton: Absolutely. Of course, you well remember our dear friend, Malcolm Chapman, who was the radiologist that I worked with very closely at Middlesex, sadly has passed, a great friend.

Laurence: Yes. Sardonic, a marvelous man.

Cotton: Those were the early days. We struggled. We were pretty ignorant and naïve, but we tried to keep ahead of everybody else. We had lots of visitors and I'm thrilled that you were one of the very first.

Laurence: I was honored to be one, Peter, which brings me to your first sphincterotomy. Tell us about the evolution of therapeutic endoscopy. I remember you had the kit and I had been in Demling's unit and seen them perform, I think, their 25th sphincterotomy, which they did with great panache and confidence.

Cotton: I'm embarrassed to say that I had absolutely no vision for therapeutic endoscopy. Over the years, I've latched onto things that other people have come up with and tried to improve them and teach them and evaluate them, but I've never seen them coming, and that was certainly true of sphincterotomy. I was busy showing stones and feeling proud of myself and stuff, but it never, ever occurred to me that we could actually remove them endoscopically. So we did hear of the first sphincterotomies done in Demling's unit in Germany and also by Keichi Kawai in Japan, and once we had heard about them, obviously we were very keen to get started.

The only company making sphincterotomes of any sort was Olympus, and the Germans were making their own. I got three sphincterotomes, I really can't remember where they came from, one of which always came out backwards. You remember those sphincterotomes that bent around backwards? I gave that to one of my competitors in England to get him started, so that slowed him down. You remember who that might be.

Laurence: Yes, I do.

Cotton: So we just had these two, which we used repeatedly.

Laurence: I remember you carried them around in a sterile, leather attaché case, which was just ideal, really.

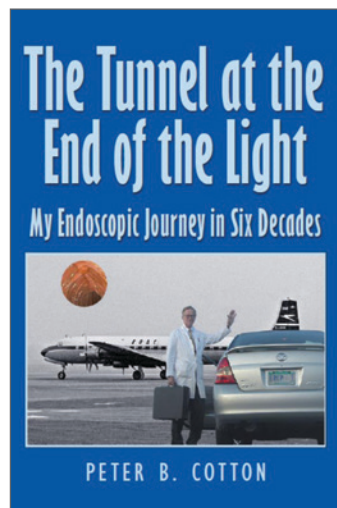
Cotton: It was the old traveling Gladstone bag that belonged to my dad. It wasn't all that sterile, as you know. I hate to think what was growing in it. Before I got a sphincterotome, I got a basket from somewhere and we tried to remove a stone by just pulling with the basket, which wasn't very smart. It didn't get stuck on that occasion, but nor did it work.

Laurence: The patient went back to the referring doctor with the basket coming up through her nose, if I remember rightly.

Cotton: That's another story, which as you know is in my book, *The Tunnel at the End of the Light: My Endoscopic Journey in Six Decades*, that you kindly contributed to. That talks about some of those early days and those early sphincterotomies.

Laurence: How about telling us about your first sphincterotomy and, just be careful what you say, because I was there and witnessed it.

Cotton: Actually, what I remember most was a marvelous lunch at Wheeler's Fish Restaurant afterwards.



Peter Cotton's story of his career, published in 2011, available at www.peterbcotton.com

Laurence: I remember that, too.

Cotton: I don't actually remember a great deal about the first sphincterotomy. I'm sure I was terrified and shaking, so you can tell me.

Laurence: There was a very large audience, if I remember rightly, of people from many countries throughout the world watching this and everybody giving their own little bit of advice, even though they'd never done one before, which I thought was quite in keeping with the evolution of a new technique really.

Cotton: We survived that one, and the patient survived. It was actually the third one where we got the basket stuck. I was very fortunate in having excellent surgical friends as well as radiologists. You will remember Chris Russell, the marvelous surgeon at Middlesex, who was tremendously supportive. I think other people getting started with sphincterotomy weren't necessarily quite so fortunate.

There was some angst amongst the surgeons that we were plying their trade and, in fact, I remember talking at the Royal College of Surgeons in London about this technique in the very early days. The president, Lord Smith, who was a wine connoisseur, said at the end of my talk that he thought the college should license a few gastroenterologists to remove stones, but they would charge corkage on each stone.

Laurence: I like that. That's nice.

Cotton: Actually, it was so obvious that stone extraction by ERCP was a real breakthrough that there wasn't too much in the way of surgical resistance. You didn't need a randomized control trial of thousands of patients to show that it was a better way of getting the stones out than operating on the patient. In those days open surgery carried a mortality of 5 percent or 10 percent, even in the best of hands. So it was a wonderful breakthrough and made us very confident, maybe cocky about the value of therapeutic endoscopy. And, with stenting coming along a little bit later, as you know, we were really flying and thinking anything we touched was perfect, which we have found out is not necessarily correct. It has been very interesting to see the evolution over the years.

Laurence: Peter, I think this is an important point and I'd be interested in your comments about the challenges in passing on the skills and knowledge, particularly about the risks and outcomes and complications and so on. For example, with ERCP, it was quite slow to take off, endoscopic sphincterotomy, wasn't it? It was difficult to make sure that the people who did it did have those skills and certainly the knowledge and awareness of the problems that could be associated with it. Would you like to elaborate on that in terms of teaching?

Cotton: I think it's still true today. There's a point at which the apprenticeship system provides somebody who has some skills who then goes out into the field and may or may not do a great job. We don't have very robust systems of quality control and it applies equally to any new technique. For instance, peroral endoscopic myotomy (POEM) for achalasia. That's a scary new technique where you tunnel underneath the mucosa and cut the muscle in the lower esophagus instead of doing it surgically.

How does one learn that? I mean, you can read about it. You can watch other people do it. You can watch videos. But, push comes to shove, eventually you've got to do it and you're not likely to be highly skilled the first time you do it. It's a challenge for all interventional procedures. Hopefully, the more you do, the better you get. That doesn't apply to my golf but it should apply to our therapeutic procedures.

The same thing applies to surgeons. They do a lot of things, some which they've done only a very few of in training or even none. The general public is generous in its imagination that specialists know what they're doing most of the time, and most of the time they do, but some of the time, they don't.

I'm particularly concerned about the quality of ERCP in the United States. There are a lot of people doing very few and not doing it very well, but this is the land of the free where you're allowed to do pretty much anything and there's very little regulation. I know that in Australia, you've got a grip of this and have restricted, as in Britain, the number of people doing ERCP, right?

Laurence: Yes, that's true, Peter. I think it again raises this issue of how you train people, and I think simulation is a good way to do it. Unfortunately, it's just too expensive in most countries and has turned out to be in Australia as well.

Cotton: You were running a simulation unit in Perth, right? Is that still flying or what's happening?

Laurence: It's contracted since I left it and certainly the surgical skills training by simulation has decreased. There are still courses for gastroenterologists, but they're not nearly comprehensive enough.

Cotton: I think the surgeons are doing a pretty decent job with simulation in the States and it's a financial discussion. Simulation is expensive but time in the operating rooms is even more expensive. Surgeons and surgical departments in the States tend to have money, so they are able to fund simulation units and their fellows and trainees spend a lot of time in them during their training period, so it's actually working quite well.

The problem in endoscopy is that there's no money and no one is paying for teaching. That's led to the development of cheaper simulation devices, like Joseph Leung's mechanical model. They

can help but haven't been incredibly popular. The old apprentice system seems to dominate.

Laurence: Yeah, I agree with you. I think we need to look very, very carefully at alternatives to actually learning on the job. I think that has such potential dangers that I just wonder if it is still justified.

Peter, can we move on to stenting and other therapeutic techniques tied to ERCP?

Cotton: The first stent was described by Nib Soehendra, with whom I have also spoken to as part of this GI milestones project. Again, I had no vision of stenting as a possibility. I'm not quite sure why. The interventional radiologists were doing something similar through the skin, so it shouldn't have been too big a step for us, but it was another breakthrough and it was obviously a good one.

At the beginning there were no manufacturers of stents, so we had to make our own, as you well know. We had to buy a roll of tubing and cut them in pieces and drill holes in them and make pigtails on them. We were convinced very early on that this was a much better way of palliating people than the old-fashioned surgical bypass and, as you remember, we looked into that in detail. Joseph Leung, one of our wonderful trainees from Hong Kong, spent time pulling the data together and to our astonishment, we found that surgery seemed to be safer than putting a stent in.

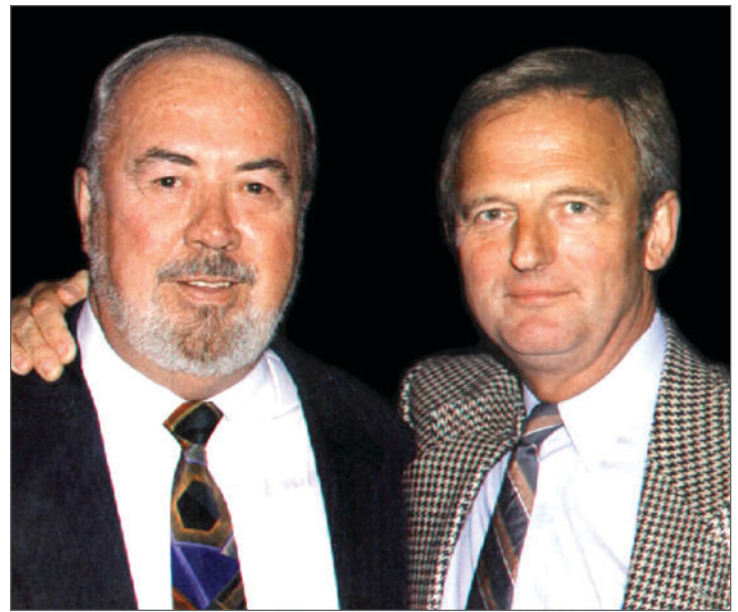
That was an eye-opener to me. As in stone extraction, there was the old apples-and-oranges issue because we were comparing surgical cases that tended to be reasonably fit patients. The patients were being referred for stenting because they were really sick or getting close to terminal and the surgeons didn't want to touch them. So that stimulated us to do one of the first randomized controlled trials in that field. It took us a number of years and eventually showed what we knew was true all along, that stenting was much safer than surgical procedure when similar patients were compared.

That type of randomized control trial has gradually taken hold in the endoscopy world and has enabled us to understand a little bit better what's really good and what's not. There are two big challenges in such research. One is that these things are operator dependent, so the results of endoscopy and surgery obviously depend on who's doing them as much as the technique itself.

The second problem in evaluating interventions is that the technologies are evolving. Surgery is much less invasive nowadays, and anesthesia and intensive care together make it much safer than it used to be. The old idea that if you could do something endoscopically, it was bound to be safer is no longer true. It's exceedingly rare for someone to die as a result of surgery unless they're almost dead when it starts. Thus, when we're trying to evaluate new procedures, the goal posts may be moving; some of these trials take several years to plan and do and it's a pity if they're out of date by the time they're published.

Laurence: It's interesting. I just wonder how important the stimulus of having a competitor like endoscopy was to the conventional traditional surgeon, how much of a stimulus that was to them looking at what they were doing and improving their outcomes.

Cotton: That's a very good point. It never occurred to me but, as you know, the surgeons in the days of the beginning of the 60s and



Don Wilson, supporter and friend

70s liked to make very big holes. Big surgeons made big holes and the idea of keyhole surgery was laughed at. They certainly didn't embrace endoscopy themselves in the early days, which was good for gastroenterologists for whom it's become their main work. They also didn't embrace laparoscopic approaches early despite the fact that the gynecologists had been doing it for a long time.

The academic surgeons were still very skeptical about laparoscopic cholecystectomy until the patients started yelling that they wanted it and suddenly they had to jump on the bandwagon and go for it. I don't like the word competition because, as you know, I've worked very hard all my life to foster multidisciplinary care, but you're right that it was a stimulus to improve and to compare and hopefully then to work together to provide the best outcomes for the patient.

Laurence: I think you're right. My personal experience was having been in Demling's unit and gone there to learn laparoscopy. I brought it back to our hospital and had a sympathetic surgeon who was supportive. But after a couple of years he said laparoscopy has nothing to offer the general surgeon and he persuaded me that he could find out more and faster and safer by making a small hole. Then a few years later, everybody started doing laparoscopic cholecystectomies, which I thought was rather ironic, really.

Peter, let's talk about the people outside of the profession who really contributed in an enormous way to the evolution and the adoption of ERCP. I'm thinking mainly of Don Wilson, who was sort of larger than life, and Wilson-Cook Medical, who supported so much of the training, so many of the meetings, and particularly providing support for the new specialty of endoscopic nursing. He really was a major contributor to the evolution of endoscopy and endoscopy skills.

Cotton: Thanks for raising that point. A lot of us owe a huge debt of gratitude to Don Wilson. He formed Wilson-Cook Medical in, I think, 1983. That's when we first met him and his small team in London. He fostered international pioneers and our efforts at training. He provided a number of fellowships for people to go and study and a lot of those people became leaders in their own countries. He very rapidly developed an armamentarium of equipment that we all used.



Inauguration of the Don Wilson International Training Program at MUSC in 1999 with Minda and Don Wilson, Peter and Marion Cotton

They were on their own, Wilson-Cook, for a while. Olympus was actually making some of the same stuff. Olympus was making so much money out of selling endoscopes that their sales people didn't bother to push the sphincterotomes and the catheters and the balloons and those sorts of things. Don made things easier for us in two ways. One, in providing the equipment, some of which we designed with him, as you may remember, but he also provided the funding for education for fellows and for conferences.

Sadly, we lost Don in the year 1999. We miss him dearly but his special wife, Minda, is still attending the meetings and we enjoy continuing that relationship.

Laurence: He was a great enthusiast and an enormous supporter and I miss him very much.

Peter, now you're retired. Do you have any regrets about your career in endoscopy? Any things that you would like to have seen changed in your lifetime that haven't?

Cotton: I think my biggest regret is that I didn't document what I was doing as I was going along in a better prospective fashion so that we would have been better able earlier to understand what we were doing. I was not very good at that. As I said, I regret some of my ignorance early on in terms of reprocessing. I'm sure that some patients suffered as a result of that. Other regrets, no. It's been a fantastic journey for me and not least meeting and becoming friends with wonderful people all over the world, including yourself.

I've had the privilege of talking or giving demonstrations in more than 50 countries now, so we have wonderful contacts all over the place, which is really great. As you know, I did stop doing procedures and seeing patients three years ago but I'm still working about half time doing research, a bit of teaching, a lot of writing.

My research recently has been focused on one of the difficult areas of ERCP and that is the so-called sphincter of Oddi dysfunction, which is as slippery as a wet bar of soap. The concept that people with post-cholecystectomy pain might have dysfunction of the sphincter has become very popular in the United States. We just spent nearly ten years planning and doing a randomized sham-controlled trial, which basically showed that at least in some of those patients, it's a waste of time doing a sphincterotomy and also not safe.

I'm about to start aiming my torch at cholecystectomy for gall bladder dyskinesia, which is another controversial subject which

seems to be thriving in the United States but no where else in the world. There's been only one small, randomized trial suggesting that it is valuable. The rest of the literature is very poor quality. So that's what I'm doing right now, quite apart trying to improve my golf, writing children's books and looking after my lovely wife and family. I'm having a really good time.

Laurence: Peter, just one final comment that I'm interested to hear from you. There is this growing concept, particularly in the medical specialties, cardiology I think is a good one, but gastroenterology is going the same way, where people spend most of their time doing endoscopic procedures and really take it out of the personal context of doctor-patient relationships. Do you think it's possible to be just an endoscopist or just an interventional cardiologist? I'm interested in your comments.

Cotton: I think it is, provided you don't pretend that you're anything else. In other words, it's crucially important to have somebody between the patient and a full-time interventionist to give informed advice and make appropriate decisions.

In the States the gastroenterology community is being consumed by screening colonoscopy. What's happened in many places is that the guys in practice all have a physician assistant or a nurse practitioner who talks to the patients and the doctors spend all their days doing procedures. I think it should be the other way around. I think the doctors should be talking to the patients and the assistant should be doing the procedures, but that's not a very popular argument. People don't like to hear that from me.

I share your view that doctoring is still crucially important in this technological age and it's very easy to lose sight of it, particularly when most of people's income in certain systems, like in the States, comes from procedures.

Laurence: Yes, that's right. It's true also in Australia.

Peter, your breakfast must be getting cold. It's been marvelous to have the opportunity to talk to you about your life in gastroenterology and particularly in endoscopy, and I wish you all well for the future.

Cotton: Excellent. Thanks very much for your time, Bernie. I look forward to chatting with you again before too long. ■

References:

Cotton PB, Salmon PR, Blumgart LH, Burwood GT, Davies BW, Lawrie JW, Pierce JW, Read AD. Cannulation of the papilla of Vater via fibre-duodenoscope. *Lancet* 1972; 1:53-8.

Cotton PB. Progress report. Cannulation of the papilla of Vater by endoscopy and retrograde cholangio-pancreatography (ERCP). *Gut* 1972; 10:14-25.

Cotton PB, Beales JSM. The role of endoscopic retrograde cholangio-pancreatography in patients with jaundice. *Acta Gastroenterologica Belgica* 1973; 12:689-92.

Cotton PB, Chapman M, Whiteside CG, LeQuesne LP. Duodenoscopic papillotomy and gallstone removal. *Br J Surg* 1976; 63:7709-14.

Cotton PB. Progress Report ERCP. *Gut* 1977; 18:316-41.

Cotton PB. Duodenoscopic papillotomy at the minor papilla of Vater for recurrent dorsal pancreatitis. *Endoscopie Digestive* 1978; 3:27-8.

Michel Cremer

Michel Cremer led a spectacular team of endoscopists at the Erasme Hospital in Brussels, pioneered many aspects of ERCP, especially in patients with pancreatitis, and had a huge influence on the field, not least with the major teaching workshops which he initiated in 1973 and which continue today. He passed in 2009.

This remembrance is by Peter Cotton, lifetime collaborator and friend.

We lost Michel Cremer in 2009 after a debilitating neurological illness. He is treasured as one of the pioneers of ERCP and its therapeutic applications, and as a close friend.

He invited me to his first major international workshop in 1973. I have a photo of the course dinner that year at the famous Maison du Cygne, along with Claude Liguory, Christopher and Christina Williams.

We collaborated on several projects, not least on studies of pure pancreatic secretion, assuming that we, or his clever biochemists, would find discrete disease markers. These studies involved me flying to Brussels every month or so with juice samples in my briefcase, which was leaking vapors from the dry ice—not something that would go well today. Overall, I recall more gastronomy than gastroenterology from those visits.

Michel had unbounded enthusiasm and many interests, but focused specifically on the use of ERCP in chronic pancreatitis. He described a widely used classification, pioneered many treatments and was early into shock-wave lithotripsy. We found ourselves on the opposite sides of the pancreas divisum debate, and I am beginning to think that he (and his trainee, Myriam Delhaye) were right in doubting its relevance as an etiological factor in pancreatitis.

As Myriam has written in this special issue, he was greatly respected, indeed loved, by his colleagues and patients.

I have so many great memories of times together, in Brussels, at Royenne, in

London and at countless international meetings. My 50th birthday was celebrated in his home, helped by his excellent cellar, and even a spontaneous cello recital.



Dining at Maison du Cygne at the first Brussels workshop in 1973

In June 2008, I was privileged to participate in a final workshop in his honor in Brussels, organized by Meinhard Classen which featured an outstanding range of endoscopic talent. We strutted our stuff and there were no dry eyes during the speeches after dinner.

Michel was a giant in this field. He is greatly missed and fondly remembered. His legacy has been maintained and enhanced by Jacques Devière.



Jacques Devière

Professor Myriam Delhaye is Head of Clinic for the Gastroenterology Department at Erasme Hospital in Brussels, Belgium. Below is her remembrance of her mentor and “spiritual father,” Michel Cremer, a great man and teacher, she says, whose “vision and passion live on.”

I started my fellowship in the Gastroenterology Department in Erasmus Hospital where Professor Cremer was already head of the department since it opened in 1977. He showed me the department on my first day and he was my mentor. He taught me routine endoscopy and ERCP, which was a novel technique at that time.



Myriam Delhaye

During ERCP training there was only one student for each teacher performing ERCP.

We did not have video at that time, everything was optical and we had to follow the procedure through a teaching scope, which was attached to the main duodenoscope. This teaching scope of course did not have the same view as our current HD videoscopes. It was full of little black spots, which increased over time and significantly hindered our vision. Professor Cremer used to tell me that in the 70s, when they first started the ERCP, each time when they saw the papilla through the optical duodenoscope, they used

References:

Dunham F, Deltenre M, Jeanmart J, Toussaint J, Cremer M. *Special catheters for E.R.C.P. Endoscopy.* 1981 Mar;13(2):81-5.

Cremer M, Dunham F, Goldman M, Toussaint J. *Post-cholecystectomy ERCP.* Lancet. 1980 Mar 29;1(8170):710-1.

Cremer M, Toussaint J, Dunham F, Delhay M, Bourgeois N. [The contribution of endoscopic retrograde cholangio-wirsungography (ERCP) to the diagnosis of anicteric cholestasis (author's transl)]. Acta Gastroenterol Belg. 1979 Sep-Oct;42(9-10):344-52. French.

Robberecht P, Cremer M, Christophe J. *Discharge of newly synthesized proteins in pure juice collected from the human pancreas. Indication of more than one pool of intracellular digestive enzymes.* Gastroenterology. 1977 Mar;72(3):417-20.

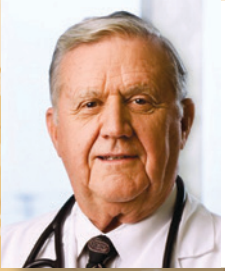
Cremer M, Gulbis A, Toussaint J, de Toeuf J, van Laethem A, Hermanus A, Hanssens JF, Fraiture P, Muller P. [Endoscopic sphincterotomy. A Belgian experience (1976) (author's transl)]. Acta Gastroenterol Belg. 1977 Jan-Feb;40(1-2):41-54. French.

Cremer M, Toussaint J, Hermanus A, Deltenre M, De Tceuf J, Engelholm L. [Primary chronic pancreatitis. A classification based on endoscopic pancreatography (author's transl)]. Acta Gastroenterol Belg. 1976 Nov-Dec;39(11-12):522-46. French.

Robberecht P, Cremer M, Vandermeers A, Vandermeers-Piret MC, Cotton P, De Neef P, Christophe J. *Pancreatic secretion of total protein and of three hydrolases collected in healthy subjects via duodenoscopic cannulation. Effects of secretin, pancreozymin, and caerulein.* Gastroenterology. 1975 Aug;69(2):374-9.

Cremer M, Engelholm L, Gulbis A, Dumont N, Deltenre M, Peeters JP, Hermanus A, Govaerts JP, de Toeuf J, Liguory C, Safrany L, Stadelmann O, Bitoun A, Cotton P. [Endoscopic cholangio-wirsungography in the diagnosis of obstructive jaundice (author's transl)]. Acta Gastroenterol Belg. 1973 Dec;36(12):642-75. French.

Those Who Changed the World Through Interventional ERCP



**Joseph
Geenen**

Racine, WI
USA



**Jerry
Siegel**

New York, NY
USA



**Peter
Cotton**

London
England



**David
Zimmon**

New York, NY
USA



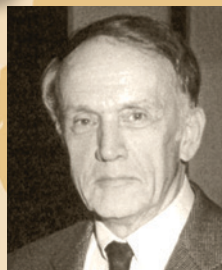
**Steve
Silvis**

Minneapolis, MN
USA



**Michel
Cremer**

Brussels
Belgium



**Jack
Vennes**

Minneapolis, MN
USA

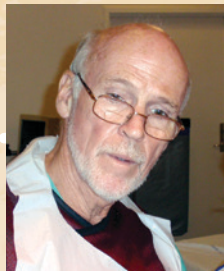


**Kees
Huibregtse**

Amsterdam
The Netherlands

40 YEARS

OF INTERVENTIONAL ERCP



**Aksel
Kruse**

Aarhus
Denmark



**Meinhard
Classen**

Erlangen
Germany



**Keichi
Kawai**

Kyoto
Japan



**Nib
Soehendra**

Hamburg
Germany



**Laszlo
Safrany**

Wilhelmshaven
Germany



**Masatsugu
Nakajima**

Kyoto
Japan



**Claude
Liguory**

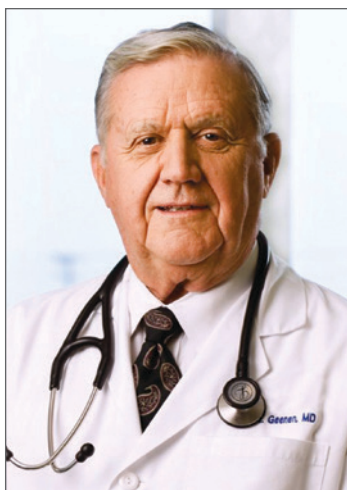
Paris
France

Joseph Geenen

Joseph Geenen had a major influence on endoscopy in the USA from his practice base in Racine, Wisconsin, and association with The Medical College of Milwaukee. He organized many popular teaching courses, co-hosted an important early consensus workshop on ERCP for ASGE in 1981 and was awarded its prestigious Schindler award in 1989. He is best known for his work on sphincter of Oddi dysfunction with long-time collaborator, Walt Hogan.

Peter Cotton: I'm sure you've got a tee time, so let's start. Can you first tell me how you got into medicine and where?

Joseph Geenen: I got into medicine in Milwaukee at the Medical College of Wisconsin. It was called Marquette Medical School but was changed in 1967 to the Medical College of Wisconsin because of support from the state. I had two uncles who were physicians and they sort of influenced me, so I was going to be a physician from the early age of five.



Cotton: So when did you graduate in medicine?

Geenen: In 1960 I took a medical internship at the University of Minnesota. I then came back to Milwaukee and started my residency.

Cotton: What hooked you on gastroenterology?

Geenen: It's very interesting. My residency was at Milwaukee County Hospital and I was very unhappy I wasn't able to talk to the people, and they couldn't talk to me. I applied for and was accepted into a therapeutic radiology residency at Yale, and then I got drafted into the Army. My time in Washington was spent taking care of retired Army people, generals and officers. I was chief of medicine and I would see about eight patients a day, reading EKGs. I then decided I wanted to go into internal medicine. The two best programs in Milwaukee were cardiology and GI, and I decided to choose GI.

Cotton: Ok, fair enough. So you started your fellowship when?

Geenen: In 1965. I only took 16 months to finish my GI fellowship. I passed my internal medicine boards and then went to



Joseph Geenen and Peter Cotton demonstrating at the Middlesex in 1984

practice in Racine (a city close to Milwaukee.) The group I joined had about eight physicians. I continued to go the Medical College, two to three days a week to teach endoscopy and do procedures.

Cotton: When did you first encounter flexible endoscopy?

Geenen: In my fellowship we started mainly with rigid scopes. My teacher was Dr. Carlos Sanz who was from Cuba. I think in '67 we started with flexible scopes. Dr. Hogan and I started doing colonoscopy together under x-ray guidance. We only had one way tip deflection and it was very difficult.

Cotton: Fascinating. Okay, let us come to the ERCP. When did you first hear about that?

Geenen: Well, what happened was that Dr. Classen and Dr. Demling came to visit Dr. Konrad Soergel to spend a week in Milwaukee (Dr. Soergel is also German). Dr. Classen and I became close friends and then I heard that he was doing sphincterotomy. I had been to Erlangen (Germany) in the late 60s before they were doing ERCP. In 1973 Dr. Classen said, "Why don't I help you with learning ERCP?"

Cotton: So, you started ERCP in 1973?

Geenen: Yes, 1973. Dr. Classen and his nurse spent one month with me. We held a one-day endoscopy conference here at the Johnson Foundation with Drs. Classen, Ogoshi, Vennes, Morrissey and several others. We did 10-15 cases a week at different hospitals. I then traveled to Hamburg, Germany.



Cotton: When you came back and started sphincterotomy were there problems? Was there some resistance?

Geenen: No, there was no resistance. There was nobody in Wisconsin or Chicago doing ERCP. In fact, I would get most of the referrals for ERCP from Chicago in the first ten years. Chicago had 3-4 million people and that's why I got so much experience early in my career.

Cotton: Right, so then you didn't have any resistance from the surgeons?

Geenen: No, I don't even think they knew what I was doing. Following the one-day endoscopy conference at the Johnson Foundation, the St. Luke's administrator said, "We'll get you an endoscopy center." So he did. We moved into a center, which had previously been used for orthopedics (cast clinic) and the venereal disease clinic. We had access to an x-ray machine because the orthopods were always taking x-rays, and then finally, they gave me two fluoroscopy x-ray machines to do the procedures.

Cotton: Excellent. You mentioned Walt Hogan. He was obviously a very early collaborator. Was it he that got you interested in the sphincter stuff?

Geenen: Yes, he and Dr. Dodds, the radiologist at the Medical College of Wisconsin, were very interested in all kinds of manometry. Jim Tooouli came in about 1980 and was part of our group. Our technician, Ron Arndorfer, helped develop the machine to record manometry.

Cotton: That obviously has been a very big focus for you and your team, and everyone relies on your major publication in the New England Journal in 1989. Sphincter dysfunction is a very interesting area. As you are probably aware, I've been working on that myself and recently published on the treatment of SOD type III, where we didn't seem to be having much impact. Do you have any views about that?

Geenen: We had the same problem. We only did the patients who had elevated pressures and a typical history of sphincter dysfunction. We didn't do just anybody with abdominal pain.

Our results were very poor so we stopped doing sphincter of Oddi manometry in type III patients.

Cotton: That was smart of you. In your early papers I noticed one on the morphine-neostigmine provocation test.

Geenen: We did that test on six volunteer nurses. Half of them developed pain and abnormal liver function tests, so we decided it wasn't a worthwhile test.

Cotton: I was a little surprised though, a couple of years ago I was in New Zealand and they still seem to be swearing by it.

Geenen: Dr. Tooouli still has a little interest in it. He thinks it might work but when we took six healthy people and it couldn't distinguish what was abnormal or different we didn't think it was worthwhile.

Cotton: I agree with that. Also, I came across one of your early publications on the use of monoctanoin. We were infusing it into the bile duct trying to dissolve stones, right?

Geenen: Yes, it didn't work very well and it really caused some inflammation with mucus coming out of the ducts.

Cotton: Another of your early publications concerned a seminar that you held in San Diego, in 1978, at the Del Coronado Hotel. I was there and enjoyed it, even though it rained the whole time.

Geenen: One of our problems with sphincterotomy in those days was that we were getting these zipper cuts, resulting in bleeding or perforation. We thought it was the wire or maybe it was our cautery machine. Nobody had any idea. Jack Vennes and Steve Silvis and I went over and over this and finally we figured out we just had to leave the papillotome open, not bowed. We had a lot of problems in the first five years.

Cotton: As you know, this series of interviews is being organized and sponsored by Cook Medical. I'd like you to reflect on your relationship with Cook and Don Wilson.

Geenen: That goes way back to '84 or '86. I went to give a talk at Dr. Marcon's course in Toronto and Don was there showing his accessories. He had a gentleman that worked with him named Pat. We went out to dinner and Don asked, "Would you help me get started in the United States? I have all these accessories in my trunk and I would like to start selling them because we know you need them." I said, "Sure, and I'll be glad to help you." So that's how we got started with Don Wilson.

Cotton: He supported a lot of pioneers around the world and I'm sure he was very helpful to you.

Geenen: Yes, he was, and I helped design a few things—a pancreatic stent and a cytology brush for the bile duct and pancreatic duct.

Cotton: Are you still seeing patients and doing procedures?



Laszlo Safrany, Joseph Geenen, Peter Cotton, Claude Liguory

Geenen: No, I stopped as of July 1st. I'm currently teaching at the Medical College of Wisconsin one to two days a week.

Cotton: I stopped three years ago and frankly I haven't missed it at all. Have you missed it?

Geenen: Well, a little bit. Of course, I was supervising our group and we had 24 gastroenterologists. I was doing more business things but was still doing six to eight ERCPs a week and training our fourth-year fellows. Our group has trained over 100 fellows in ERCP and now EUS.

Cotton: And now you have family in the business, right?

Geenen: Yes, my son Dan is a gastroenterologist also. He took his fellowship at the University of North Carolina in Chapel Hill.

Cotton: Is he doing ERCP and the other advanced stuff?

Geenen: He started doing EUS and didn't like it, so he went back to just colonoscopy and EGD.



Dan Geenen

Cotton: That will keep you busy these days, for sure. Alright, looking back on your career, Joe, there are a lot of highlights. Are there things that you regret not having done or maybe having done that you're prepared to share with us?

Geenen: I think I regret a little bit not learning endoscopic ultrasound. We started to do that in 1990 and it really has become an important part of the treatment of pancreaticobiliary disease.

Cotton: I gave it up in 1983, much too difficult for me. So, any final words?

Geenen: I don't think so. I just had a great career and I want to thank everybody for helping me. I was all over the world and did procedures in Paris, Brussels, Hamburg and I even went to your Middlesex Hospital.

Cotton: I have a picture of your doing an ERCP procedure with me at The Middlesex.

Geenen: Remember when we were in Germany with Safrany driving at 250 miles an hour?

Cotton: Actually, it was 240 kilometers an hour, which is about 160 miles an hour. It's difficult to forget it.

Cotton: So how much time are you spending in Arizona?

Geenen: At least a couple of weeks per month. We have two daughters that have homes there as well, so it's very nice for us.

Cotton: Do you play golf every day?

Geenen: No. Usually about three times a week. I wish I was getting better.

Cotton: It's been great talking to you, Joe. Thank you so much for your time.

Geenen: You are welcome, thank you. ■

References:

Geenen JE, Hogan WJ, Shaffer RD, Stewart ET, Dodds WJ, Arndorfer RC. Endoscopic electrosurgical papillotomy and manometry in biliary tract disease. JAMA 1977;237:2075-8.

Geenen JE, Hogan WJ, Dodds WJ, Stewart ET, Arndorfer RC. Intraluminal pressure recording from the human sphincter of Oddi. Gastroenterology 1980;78:317-24.

Geenen JE, Vennes JA, Silvis SE. Resume of a seminar on endoscopic sphincterotomy. Gastrointest Endosc 1981;27:31-8.

Geenen JE. Presidential address 1983. Accountability of gastrointestinal endoscopists. Gastrointest Endosc 1983;29(4):265-8.

McCarthy J, Geenen JE, Hogan WJ. Preliminary experience with endoscopic stent placement in benign pancreatic diseases. Gastrointest Endosc 1988;34;1:16-8.

Geenen JE, Hogan WJ, Dodds WJ, Toouli J, Venu RP. The efficacy of endoscopic sphincterotomy after cholecystectomy in patients with sphincter of Oddi dysfunction. N Eng J Med 1989;320;2:82-7.

Kees Huibregtse

Kees Huibregtse was not one of the earliest in the field, but became a major player in the mid 1970s, in collaboration with Guido Tytgat. His unit in Amsterdam was a magnet for would-be ERCPists who flocked to watch him perform. His dexterity and hospitality were legendary.

Peter Cotton: Kees, tell me, please, where you grew up, and where you went to med school.

Kees Huibregtse: I have lived in the Netherlands for all my life, and I was born in a village close to The Hague. I went to the University of Leiden to study medicine in 1959. Leiden is the oldest university of the Netherlands (founded in 1575). I had a great time in Leiden, but didn't study that much. In 1967, I moved to Amsterdam and finished my medical studies in 1971.



Cotton: Then how did you get into gastroenterology?

Huibregtse: Well, that was via a spell in hematology. In 1972 I spent three months in London in the laboratory of Professor David Mollin. He was a fabulous hematologist, who discovered that Vitamin B12 was absorbed in the terminal ileum. He inspired me to become a hematologist but the department of hematology in Amsterdam was run by an elderly man who was worn out and not encouraging to do any research. At that point I met a recently appointed young Flemish gastroenterologist, Guido Tytgat, who was very enthusiastic and energetic.

Cotton: And you were stimulated by what he was doing?

Huibregtse: Yes, and I went to his radiology conferences. He was very inspiring and an excellent teacher.

Cotton: That has not changed.

Huibregtse: He asked me to join him to specialize in gastroenterology. In 1976, he became a professor and I was his first trainee.

Cotton: Excellent, and certainly one of his best. I'm sure he would say that.



Peter Cotton, Joseph Geenen and Kees Huibregtse

Huibregtse: I hope so, yes. Those were the good old days. Joep Bartelsman joined and the three of us had a perfect time until our retirements.

Cotton: By that time flexible endoscopy was quite well established in other places, so you were introduced immediately to flexible endoscopy?

Huibregtse: Yes, and as far as I remember, the first ERCP in Amsterdam was performed in 1975. Guido started to do ERCPs. Those first ERCPs were very time consuming and took even three hours.

Cotton: Then you got your hands on the duodenoscope yourself?

Huibregtse: That must have been in 1976.

Cotton: So did Guido do the first sphincterotomy in your hospital?

Huibregtse: Yes, and then in 1977-78 I took over, and Guido stopped doing ERCPs.

Cotton: I guess that became your primary activity really, didn't it?

Huibregtse: Yes. I did also, of course, therapeutic colonoscopies for difficult polyps and those kind of endoscopies, but more and more, ERCP became my main specialty at the department, apart from the management of the endoscopy unit.

Cotton: And you were very early into stenting, I remember.

Huibregtse: Yes. That was in 1980. You remember an article that Nib Soehendra published, describing how he left a nasobiliary drain in patients beyond a stricture of the bile duct and then he left part of the nasobiliary drain in the patient. So then I thought, “Wouldn’t it be easier to have a little piece of tubing to put in the bile duct.” In 1980, I placed the first larger size endoprosthesis—3.2 mm, 10 French gauge—because the smaller stents all gave problems of cholangitis, as you know.

Cotton: I presume that was because a big channel duodenoscope was produced?

Huibregtse: No, I used a very difficult technique. First I inserted a four meter long balloon in the bile duct with a duodenoscope with a 2.7 mm channel, inflated the balloon and then removed the endoscope. The balloon was kept inflated with help of two clips. We then inserted the gastroscope with a 3.7 mm channel and the stent over the balloon catheter, pulling slowly the balloon catheter. There were two possibilities. If the balloon remained intact, I could push the prosthesis through the papilla and through the bile duct stricture over this balloon catheter; or the balloon collapsed and then I had to start all over again. This technique I described in *Endoscopy* in 1981. In the first patient I could already prove that she had no recurrence of jaundice for the three months till her death and that had never occurred with the small diameter endoprostheses.

Cotton: Well that was a triumph. So when did the big channel duodenoscope arrive?

Huibregtse: I got a prototype of a 3.7 mm channel duodenoscope in April 1981.

Cotton: You’re famous for a number of things, Kees. I wanted to touch on your advocating the pre-cut which, as you know, I’ve had some concerns about, not when done by experts but when done rather freely by other people for questionable indications. A lot of people came to visit you and they saw you do pre-cuts very quickly, right? And they went home and did the same thing, which I guess is what students are supposed to do.

Huibregtse: Yes. Most of them with great success.

Cotton: You had hundreds and hundreds of people come to visit you in Amsterdam, I believe. You were very hospitable and friendly, I know, to those visitors. When did you first contact our good friend, Don Wilson?

Huibregtse: I think it was Don contacting me and that was because of that article in *Endoscopy*. He came to the old hospital, the Wilhelmina Gasthuis. He came several times and he invited me also to participate in Norman Marcon’s first course in Toronto.

Cotton: And you helped him design a number of things?

Huibregtse: Well, of course, what I designed was the side flap, which was published in the 1981 *Endoscopy* paper. But as you know, that was commercialized by Cook and Joseph Leung.

Cotton: Many people have reflected on their relationship with Don Wilson. I’m sure you would agree that he was a tremendous friend to the pioneers like yourself.

Huibregtse: Oh, yes. He supported me to go all over the world to perform and teach ERCPs and to participate in conferences. That was great but unfortunately there were some controversies with Guido Tytgat, so he never supported fellows in Amsterdam.

Cotton: As you know, we lost Don Wilson some years ago but I think you still keep in touch with Minda.

Huibregtse: Yes, she visits us every now and then in Amsterdam. And I came to Point Roberts to see Don a couple of weeks before he died.

Cotton: I did, too. We still miss him after all this time. His name is commemorated in a number of memorial lectures around the world at major endoscopy meetings, which is very nice.

Huibregtse: Sure, he deserves it definitely. He was an important supporter of therapeutic endoscopy.

Cotton: I mentioned the pre-cut, which you promoted, and stenting. What other things, looking back, are you particularly proud of?

Huibregtse: Well, I think that I can be proud that I have trained a lot of people from abroad for shorter or longer periods, and we have contributed to the development of gastroenterology and endoscopy in the Netherlands. At the time I was registered as a gastroenterologist, we were only 18 gastroenterologists. At the time of my retirement, now 12 years ago, we were with more than 400.

Cotton: Tell me how ERCP is organized now in the Netherlands. As you may know, in the United States there are still a lot of people doing not very many procedures. I’ve advocated for years that there should be Centers of Excellence doing most of the advanced procedures. Is it well organized in the Netherlands now?

Huibregtse: It’s still not very well organized and that is a pity, but the training is better organized. The training for students consists now of three years internal medicine and three years gastroenterology. In the last year of training, a spell of six months is available for ERCP. Not all trainees receive training in ERCP. There is a selection procedure by the staff members of the department.

Cotton: Numbers are always a contentious issue. What is a reasonable number?

Huibregtse: Well, it is twelve years ago since I retired but at that time, we thought that about 180 procedures should be performed by trainees under supervision.

Cotton: Right. I think that came from the study from Duke University, which was the first one that really showed that you needed more than a lot of people thought. But even that number is, I think nowadays, too small because of the complexity of the cases. I don’t know about the Netherlands but in the United States, all this bariatric surgery is making ERCP very difficult.

Huibregtse: My daughter, Inge, is now doing advanced endoscopy. She was trained in ERCP at the AMC under Erik Rauws and she finished last June. She is now continuing her experience in advanced endoscopy in an Amsterdam Hospital and in the main Cancer Center. She does all the ERCPs with a more experienced gastroenterologist supervising her. She is getting better and better and I think she has done now about 100 ERCPs, but she should do at least twice that number.



Inge Huibregtse

Cotton: Congratulations. That's another wonderful part of your legacy. Looking back, Kees, are there some things that you regret in your endoscopic career? Things that you wish you had done or not done?

Huibregtse: The one thing I regret is that I have not been commercial enough, but overall I'm most happy with the past and how it all developed. We have been very lucky that the three of us made such a strong and successful team, professionally as well as in friendship.

Cotton: Excellent. Are there things that you want to add?

Huibregtse: I'm sorry that I have very few photographs. About ten years ago a book was published called *The Golden Years* (1971-2002) and that covers also the first days in the Wilhelmina Gasthuis and the Academic Medical Center in Amsterdam.

Cotton: That sounds very interesting, but I don't remember seeing it.

Huibregtse: I will do my utmost to have another copy to send you.

The Golden Years featuring Guido Tytgat, Huibregtse and Joep Bartelsman

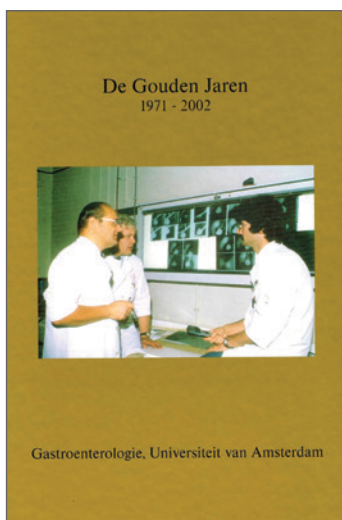
Cotton: This has been a very interesting discussion. Kees, thank you for your time. ■

References:

Huibregtse K, Haverkamp HJ, Tytgat GNJ. (1981). Transpapillary positioning of a large 3.2 mm. biliary endoprosthesis. Endoscopy 13, 217-219.

Huibregtse K, Tytgat GNJ. (1982). Palliative treatment of obstructive jaundice by transpapillary introduction of a large bore bile duct endoprosthesis. Gut 23, 371-375.

Huibregtse K, Katon RM, Tytgat GNJ. (1986). Precut papillotomy via fine needle knife papillotome: a safe and effective technique. Gastrointest Endosc 32, 403-405



Aksel Kruse

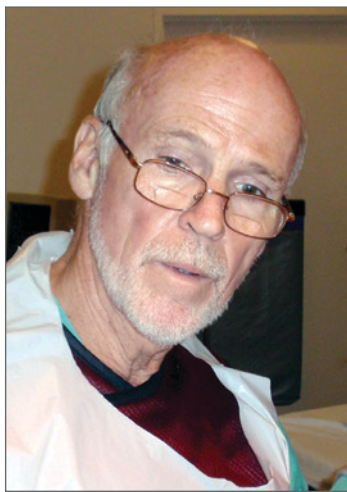
Aksel Kruse has spent his whole life in Aarhus, Denmark. He trained as a radiologist but embraced endoscopy early, made his first ERCPs in 1972 and sphincterotomies in 1975. He was an innovator of many techniques and became a magnet for trainees from all over Europe and overseas. He is a key member of SADE (Scandinavian Association for Digestive Endoscopy).

Peter Cotton: I assume, Aksel, that you grew up in Denmark.

Aksel Kruse: Yes, I grew up on a farm in Jutland, near the east coast. I did my training in Aarhus, supplemented by regular courses, mainly in Germany, Sweden and England.

Cotton: What attracted you to gastroenterology?

Kruse: It was a meeting with Einar Krag. He was a senior registrar in the Department of Internal Medicine and Infectious Diseases in Aarhus where I was appointed half a year after my graduation from medical school. He was a gastroenterologist and had about one year before he finished his thesis on what he called the pseudo ulcer syndrome, meaning patients who had classical symptoms of duodenal ulcer but with no signs on X-ray exams, which was what they had at that time.



Einar Krag

Cotton: What made you want to work with him?

Kruse: His dedication to quality, to constant self-criticism and scientific approach to what kind of treatment we offered patients.

Cotton: What was your first contact with endoscopy?

Kruse: It was in the autumn of 1969 with Dr. Krag.

Cotton: What instruments would those have been?

Kruse: The GTFA gastro camera and a GFB gastroscope, which soon became my favorite.



Jerry Wayne and Aksel Kruse

Cotton: For young people nowadays it's always a surprise to know that the first flexible gastroscope from Olympus had side-viewing optics. Do you think that starting with that GFB helped us to embrace ERCP later?

Kruse: It would definitely be an advantage in entering the duodenum and especially concentrating the interest around the ampulla of Vater.

Cotton: Which year did you become a specialist?

Kruse: I became a radiologist doing GI endoscopy subspecialty.

Cotton: Right, so you were appointed to the faculty at Aarhus.

Kruse: It must have been in 1972.

Cotton: Almost exactly the same time that I got offered my first faculty position in London. Let's move on now to ERCP. Of course, it was not called ERCP then. When did you first hear about this new idea of getting into the bile duct and pancreas?

Kruse: Well, I heard of it at meetings and read about it in journals but the first time I saw it was at the workshop at the Henri Mondor Hospital in Paris in 1972.

Cotton: Oh, I remember that well. That was such an important meeting. Olympus brought together one person from each country in Europe that was doing ERCP. Claude Liguory was the local host.

Kruse: We all had to share one teaching attachment.

Cotton: The meeting was held in conjunction with the European Congress and I remember that the reception was at the top of the Eiffel Tower. In fact, the first presentation of the cannulation procedure outside Japan was at the World Congress, which I think was in Copenhagen.

Kruse: That's right, in 1970 by Dr. Oi.

Cotton: He was working with the Machida Company to develop a long duodenoscope and my teacher, Dr. Ogoshi, was working with Olympus at the same time. When did you first get your hands on the duodenoscope?

Kruse: It was 1972. One of our surgeons had bought one with the intention to perform ERCP and he tried and tried and sweated and swore, cursed, including the instrument, then he threw it away and said it can't be done. I took it. It was the JFB with the serial number 123.

Cotton: Did you have any teaching or did just like many people, including myself, pretty much get started on your own?

Kruse: I saw it done, as you know, in Paris in '72 and I visited a colleague, Leonard Whelin, in Malmo, Sweden. I saw them do it and then I said to myself, when they can do it, so can I.

Cotton: Let's move on to sphincterotomy, which was obviously a major breakthrough. I had no personal vision that that would ever be possible. How did you get started?

Kruse: I attended an Olympus-sponsored workshop on therapeutic GI endoscopy in Hanover, 1974. On that occasion, Meinhard Classen showed and talked about his first few sphincterotomies. Of course, I tapped his shoulder and said, "Can I come and visit you and study your technique?" At that time he was chief gastroenterologist at the Bamberg Hospital in Hamburg. For me it was easy to go there. He had a waiting list so he said next spring. In the springtime of 1975, I spent three days with him in Hamburg.

Cotton: Once you went home, did it get started easily or did you have some problems?

Kruse: The problem I had was mainly to make the instruments according to Classen's design.

Cotton: Oh, you had to make the sphincterotomes yourself?

Kruse: Yes, I had. I had to burn holes in the sphincterotome for the tip and about 20 millimeters high up for the thread to come through. One of the first days of August 1975, I succeeded in performing my first sphincterotomy.

Cotton: Without any problems?

Kruse: Without any problems. No complication. Stones were delivered spontaneously and at that time student nurses in Denmark anyway were kind enough to try to detect the stones in the patient's feces.

Cotton: I think that's called "going through the motions." Was everybody happy in your hospital or was there some resistance from surgeons?

Kruse: No, everybody was impressed and especially my mentor, Erik Amdrup, who was professor of GI surgery.

Cotton: A very famous surgeon.

Kruse: Amdrup invited me to an afternoon discussion, cup of tea and some cookies. We agreed that I would start in his department and then he would organize and raise enough funding for me. After I had made the first successful five or six sphincterotomies, Amdrup sort of forced me into a surgical meeting in Copenhagen organized by Professor Andreason, Amdrup's competitor. He was kind, invited me and it was a great success. All the surgeons flocked around and said, "How can you do it?"



Erik Amdrup

Cotton: That's really good. I think some of your colleagues and mine had a less easy start with the surgeons. It became obvious very quickly to most people this was an incredible breakthrough. Another one, of course, was the ability to put in a biliary stent. Tell us about your first attempts of that.

Kruse: After attending the International Congress of Gastroenterology in Budapest in 1976, I was inspired to go home, to try to stent malignant biliary strictures.

Cotton: Somebody spoke about that in Budapest?

Kruse: Only by the percutaneous technique. Coming home, I addressed the Cook Europe people with whom I was working closely and said, "Can you make me a long guide wire with a flexible tip that will not perforate the bile duct? Can you make me some devices that later on can be put over the guide wire to stay in the stricture?" They worked on it and they made a long monofilament wire guide, rather rigid and certainly not kink resistant. They made the first three stents for me, made out of stainless steel coils.

Cotton: Really?

Kruse: Yes. In 1977 I managed to insert two of these in different patients.

Cotton: Why did you start with stainless steel rather than plastic? That's very interesting.

Kruse: They thought that plastic stents would be too smooth and would fall out, which later on turned out to be wrong, of course. What happened to my two patients was that the day after insertion, sweating, etc., the stents had migrated.

Cotton: I had no idea that you put a metal stent in 1977. That's incredible. Well done. What happened after that?

Kruse: Well, later on we worked and got more flexible guide wires and I heard about plastic stents with a flap. In 1978, the same year as everybody else I suppose, I could start performing regular stenting in malignant strictures.

Cotton: You mentioned Cook Medical. As you know this series of interviews is sponsored by Cook in the United States. Maybe you could speak a little bit more about Cook and particularly about Don Wilson, who was a great friend to many of us.



Aksel Kruse, Guido Tytgat, Kees Huibregtse and Peter Matzen

Kruse: Cook Europe had their headquarters in Denmark. They produced catheters, devices, guide wires, etc., mainly for radiology but soon also for endoscopic accessories. I worked very closely with their chief of research and development, Mr. Mollgaard. Together we strived at improving the equipment. I first met Don Wilson in 1979.

Cotton: Don supported so many things in the early days. Did he help you?

Kruse: He did. He invited me and sponsored my participation in important meetings and postgraduate courses. He also sent prototypes and new devices for me to try.

Cotton: I think you had quite a close contact with friends in Amsterdam.

Kruse: Absolutely. I had the opportunity, due to some of my gastroenterology work, because I did also some gastroenterology alongside my training in radiology. I made a number of trials on new drugs. Due to this work, I had the funding for inviting groups, Danish doctors, surgeons, as well as physicians, gastroenterologists, to seminars organized by me and Peter Matzen, together with Kees Huibregtse.

Cotton: In Amsterdam.

Kruse: In Amsterdam and in Hamburg. In Amsterdam there were more than 10 such meetings, always the last Friday of April. A group of 20 people plus Peter and I would go into the labs, see the procedures, discuss doing procedures, whatever. Followed by an afternoon seminar with scientific presentations and discussions of what had happened in the morning.

Cotton: Like all of us, once we were able to do some of these techniques, we were inundated with people who wanted to learn them. You must have had a very large number of trainees in your career.

Kruse: Yes, I certainly did. We invited younger doctors from Denmark to these two events and in Hamburg, which Fritz Hagemuller named the Aarhus Altana Connection.

Cotton: You had trainees from other countries as well?

Kruse: Yes, including four British radiologists who came here to study ERCP with me. I remember John Rawlinson and David Nicholson.

Cotton: Now you mentioned radiology several times, I'd forgotten your training in that area. How important was that for you in development of the ERCP procedures?

Kruse: I would definitely consider it an advantage because angiography, playing with intraluminal catheters, turning around corners and into the cerebral vessel, sometimes into the intrahepatic vessels, etc., was an advantage for later on working in the bile duct and the pancreatic duct.

Cotton: You were doing interventional radiology?

Kruse: Yes.

Cotton: I didn't realize that. There was a big tradition in Denmark for those sorts of procedures.

Kruse: Actually, it came from Sweden. I was inspired by my radiology professor, Bent Madsen, to take it up. It was mainly diagnostic but a few therapeutic cases. I had the opportunities to do them before I went into therapeutic ERCP.

Cotton: As well as taking trainees from other countries, I'm sure you were in demand for traveling and giving lectures and demonstrations around Europe and the world.

Kruse: Yes, certainly. I had the opportunity to work closely with the European Society of Gastrointestinal Endoscopy. I was a board member for 13 years. Having different posts during that period being counselor, being treasurer, head of education committee, vice president, etc.

Cotton: When I was the administrative secretary, which was while I was still in London in the 1980s, ESGE had no money at all. Obviously, that has changed and it's now become a very important society.

Kruse: I think it is a very important scientific society. Caring about quality and teaching, especially.

Cotton: I think you mentioned to me that you had a special student from Russia.

Kruse: I had, yes, Ekatarina Ivanova. She was one of about 25 young doctors from different European countries sponsored by grants from the ESGE that came to study with me for one month. Their grant would cover traveling expenses, boarding, lodging and there was no tuition fee, of course. No tuition fee either for me.

Cotton: Of course not. That's the world of academia.

Kruse: I met so many people from different European countries. Of course, rumors spread. People came, sponsored by their local governments from Egypt, from Syria, Lebanon before the civil war, from India, from Canada, from everywhere. I had a Chinese grantee for four months.

Cotton: You have endoscopic children all over the world. Now they have children so you have endoscopic grandchildren, maybe great-grandchildren.

Kruse: You never know. One of the interesting and for me amusing arrangements I made in this context was with Jerry Wayne. We had invited him as a guest lecturer to the Denmark Society of Gastroenterology. Must have been about mid-70s. We had organized a SADE course related to it.

Cotton: SADE is?

Kruse: SADE, Scandinavian Association for Digestive Endoscopy. Maybe you remember we exploited you in the same way. During the relaxed dinner, Jerry Wayne was very interested in the concept of this SADE course because he said how can you permit, how can you accept visitors and give them access to hands-on training on patients. I said that together with Peter Matzen in Copenhagen, we had negotiations with our local hospital board, the regional board, etc., and we got the permission that if people came to do procedures

under our personal close supervision on our usual conditions, then they would accept it and they would not even demand a special insurance policy.

Cotton: Is that still the case in Denmark?

Kruse: Yes. In Norway, also, and in Sweden.

Cotton: That's interesting. Certainly not possible in USA. Let's move on. Are you still doing the ERCP procedures?

Kruse: I did my last on the second of January this year. The reason I stopped was my cancer diagnosis.

Cotton: Yes, I read about that. I'm sorry. Sounds as though you're doing okay.

Kruse: I should continue. Jerry Wayne was very interested about this and he said what if I could inspire one of my juniors to come to you, would you accept him as a visitor and give him access. I said, of course. He also whispered to me...don't forget the fee. If it is not with fee, they don't value it enough.

Cotton: Some people came from the States?

Kruse: Oh, yes. I think about 28.

Cotton: Who was the first one?

Kruse: The first one was Ken Mauer. He went into private practice as a gastroenterologist somewhere north of New York.

Cotton: We can go on talking forever. Looking back on your career, are there any regrets that you're prepared to speak about, things that you missed out on or did that you shouldn't have done maybe?

Kruse: Yes, in fact there is one. You remember my first visit to you in London at St. Thomas Hospital. I will never forget it. I tried to grab as much knowledge as possible. I saw on your whiteboard there was a drawing. I don't know who made it. A little boy sitting on the pot. You had written that "the job isn't finished until the paperwork is done."

Cotton: Exactly.

Kruse: My regret is that in my enthusiasm for what I achieved, I did not succeed in getting well enough organized with data-based recording of my findings. The paperwork was done but the electronic databases came too late and not really workable.

Cotton: I have the same regret. We did so many things but we were unable to assess their value because we just didn't have the appropriate documentation. That's still applies today in so many situations. We're getting better at it for sure. Anything you want to add?

Kruse: Well, the one and only last thing I would like to roundup is: I think I've had a very interesting life and busy life, thanks to many people who shared the same interests, who sponsored or who were backups for me. I would also like to acknowledge the

inspiration from you, and your attitude, so you are my mentor number three. All the time, I admired your friendliness. I never forget that you even invited me to your private home to stay over when I visited you in London.

Cotton: I share your good feelings about the comradely way that we got started and we've continued in that way. It's been a wonderful experience for all us. Aksel, thank you so much and we will keep in touch. All the very best.

Kruse: I'll do my best. I will let the oncologists do their best.

Cotton: Of course. Take care, buddy. ■

References:

Kruse A, Mathiasen MS. [Endoscopic retrograde cholangiography and pancreatography (ERCP). 100 investigations]. Ugeskr Laeger. 1976 Apr 12;138(16):971-7. Danish.

Rosseland A, Osnes M, Kruse A, Skrede M. Endoscopic papillotomy (EPT) with removal of common bile duct stones. Acta Chir Scand. 1977;143(1):49-52.

Kruse A, Thommesen P, Frederiksen P. Endoscopic retrograde cholangio-pancreatography in pancreatic cancer and chronic pancreatitis. Differences in morphologic changes in the pancreatic duct and the bile duct. Scand J Gastroenterol. 1978;13(5):513-7.

Csendes A, Kruse A, Funch-Jensen P, Oster MJ, Ornskov J, Amdrup E. Pressure measurements in the biliary and pancreatic duct systems in controls and in patients with gallstones, previous cholecystectomy, or common bile duct stones. Gastroenterology. 1979 Dec;77(6):1203-10.

Rosseland AR, Osnes M, Kruse A. Endoscopic sphincterotomy (EST) in patients with Billroth II Gastrectomy. Endoscopy. 1981 Jan;13(1):19-24.

Kruse A. Pancreas divisum. Schweiz Rundsch Med Prax. 1981 Nov 10;70(46):2064-7.

Keichi Kawai and Masatsugu Nakajima

When Professor Kawai was head of the endoscopy team at the Kyoto Prefectural University of Medicine in the late 1960s, like most Japanese endoscopists at that time, he was primarily interested in gastric cancer and its early diagnosis, as reflected in his early noted publications. He encouraged his young staff member, Dr. Masatsugu Nakajima, who became a primary pioneer in ERCP and sphincterotomy. Dr. Nakajima kindly shared these comments about those exciting early days.



Keichi Kawai



Masatsugu Nakajima

I graduated from the Kyoto Prefectural University of Medicine in 1967 and became a resident in Prof. Masuda's department. After that, I moved to the Department of Preventive Medicine on staff when Dr. Kawai became a professor. I worked very hard with him and other teachers in the endoscopy unit.

Much encouraged by Dr. Oi's first report on ERCP at the Japanese Gastroenterological Endoscopy Congress in 1968, I helped Olympus to develop a side-viewing duodenoscope and we succeeded in our first ERCP at the end of 1969. I was the first pioneer of ERCP in our university and in the western part of Japan.

Dr. Kawai had many ideas about sphincterotomy (EST) and our first experiments using dogs were published the *Journal of Kyoto Prefectural University of Medicine* in 1973. We developed a diathermy knife (Figure 1). My first clinical sphincterotomy (EST) was done August 16 of 1973 at the Biwako GI Hospital (Figure 2). This was the first EST, at much the same time as the first description by Demling and Classen in Erlangen. We presented EST at the 1974 World Congress in Mexico City (Figure 3) and received loud applause. Although Dr. Kawai was the first author on these papers, it was me who actually did the procedures and wrote the papers. At that time, this style was common in the Japanese academic world.

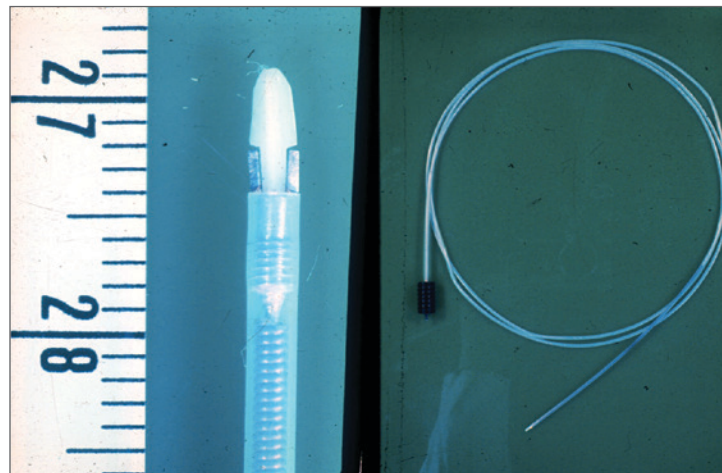


Figure 1: Diathermy knife

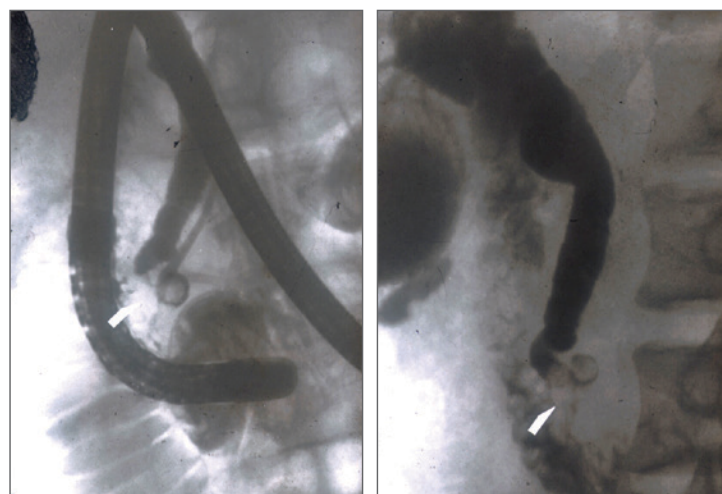
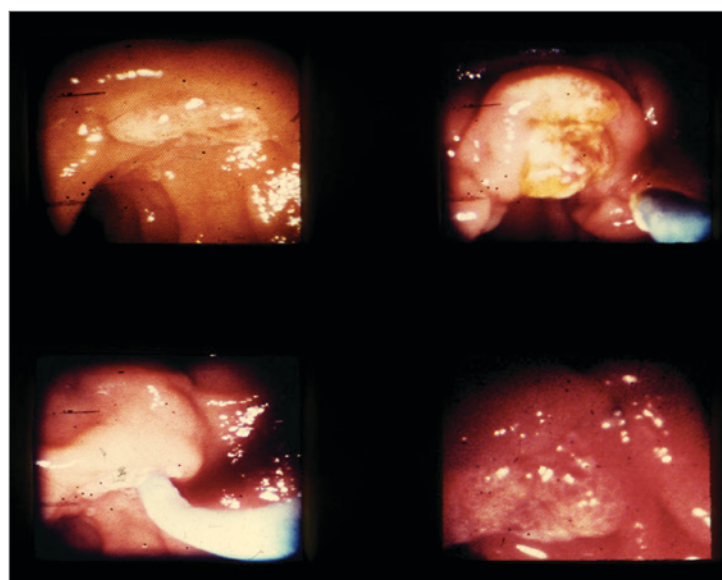


Figure 2: Images from my first sphincterotomy



Figure 3: Fukumoto, Kawai, Masuda and Nakajima at the 1974 World Congress in Mexico City

I had much resistance from many Japanese surgeons at presentations of EST in many congresses, but the surgeons belonging to the university hospital and Biwako GI Hospital gave us great support and suggestions in developing and advancing the EST techniques.

I retired from clinical work and procedures three years ago but still enjoy being in the hospital every day. It is my great pleasure to share my experiences with young endoscopists, especially regarding ERCP, EST and other biliopancreatic endoscopy techniques. ■

References:

Kawai K. Symposium on early gastric cancer, 2. The process of early gastric cancer. Nihon Naika Gakkai Zasshi, 1968 Oct 10; 57(10):1177-81.

Kawai K. Early gastric cancer in Japan. Relationship between early and advanced cancer. Actual Hepatogastroenterol (Paris). 1969;5(7):B307-14.

Kawai K, Takada H, Takekoshi T, et. al. Double contrast radiograph on routine examination of the stomach. Am J Gastroenterol. 1970 Feb;53(2):147-53.

Kawai K, Akasaka Y, Hashimoto Y, Fukumoto K, Nakajima M. Preliminary report on endoscopical papillotomy. J Kyoto Pref Univ Med. 82: 353-355, 1973.

Kawai K, Akasaka Y, Murakami K, Fukumoto K, Nakajima M. Endoscopic sphincterotomy of the ampulla of Vater. Gastroint Endosc 20: 148-151, 1974.

Nakajima M, Kimoto K, Ikehara H, Fukumoto K, Kawai K. Endoscopic sphincterotomy of the ampulla of Vater and removal of common duct stones. Am J Gastro 64: 34-43, 1975.

Nakajima M, Kizu M, Akasak Y, Kimoto K, Kawai K. Five years experiences of endoscopic sphincterotomy in Japan. A collective study from 25 centers. Endoscopy 11: 138-141, 1979.

The Wilson Legacy



Minda Wilson

My introduction and adventures into the world of GI endoscopy began 32 years ago when I met and then married Don Wilson. It has been a wonderful adventure that, despite his death in 1999, continues for me today.

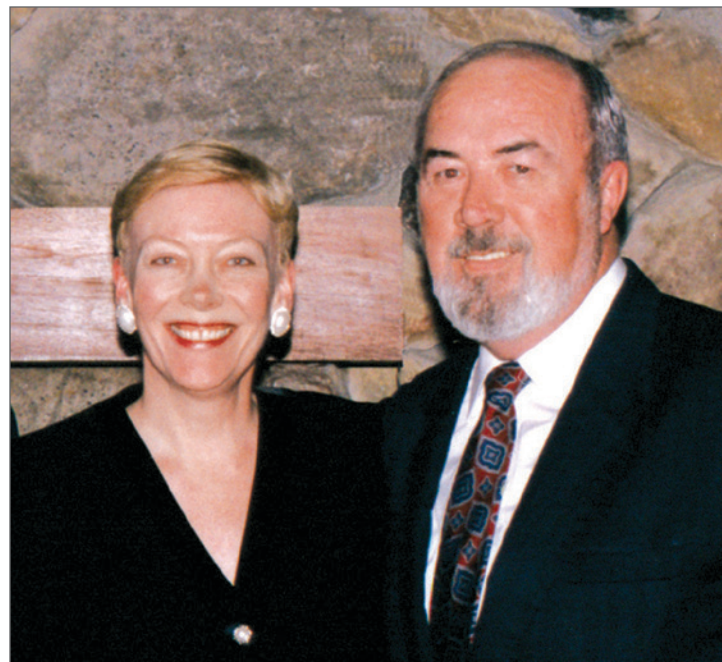
It was wonderful to meet and get to know all these world famous endoscopists and in many cases their wives and children, as well. Many became good personal friends and those friendships continue today in

the US, Canada, Europe, Australia and Asia. I count the Marcons, Cottons, Huibregtses, Soehendras, Zimmons and many others as wonderful friends over these past 32 years.

Now I am fortunate to count the generation of endoscopists that followed—Jacques Devière, Guido and Dominique Costamagna, Horst and Silvia Neuhaus, Fritz and Luzia Hagenmeuller, James Lau, Joseph Sung and others—as friends.

I continue to be invited to courses in Toronto, Brussels, Rome, Dusseldorf, Hamburg and Hong Kong. Through them, I am getting to know yet another generation of endoscopists. I am the link to the past and the legacy left by Don. It is important to keep these relationships strong and ongoing as they represent the past, the present and the future of endoscopy.

Minda



Minda and Don Wilson



The Wilson summer camp for children of many pioneers in North Carolina, 1990



The Wilson summer camp, 1991

40 YEARS

OF INTERVENTIONAL ERCP

COMING IN VOLUME 2

“I started with laparoscopy. Unfortunately I didn’t think to remove the gall bladder. Also, we had a lot of esophageal cancer, and before starting treatment, we checked if there is no compression of the bronchial system. Only with local anesthesia, we did rigid esophagoscopy and rigid bronchoscopy in the same session. My first sphincterotomy was in October 1974 in a lady with a residual stone at Gustave Roussy hospital. We made by ourselves the papillotome using a catheter and fishing wire.”

— Claude Liguory

“I moved to Germany on my 45th birthday. Professor Demling from Erlangen introduced me to the professor of surgery in Münster. He knew how important it was for a surgeon to have endoscopy available. My first sphincterotomy was in May 1974. I made the sphincterotomes myself, but had a big problem. The bare wire penetrated my finger and they almost had to amputate it.”

— Laszlo Safrany

“I did my first ERCP in 1970, in Hamburg at the Catholic Hospital. I got the key to the X-ray room from the radiologist when they finished their work. I was alone – just me, and the patient, nobody assisted me. I left the catheter inserted in the papilla and the scope on the side of the patient and I run to the other side to make the x-ray picture.”

— Nib Soehendra

“Sheila Sherlock had a condo in Miami. She came back after the Christmas holiday in 1973 with a Chiba needle. She came into our radiology conference and said, “Boys (of course there were half women), I have this skinny needle for percutaneous cholangiography, and I want us to compare it to ERCP.”

— Jerry Siegel

“I went to the VA Research Committee in 1970 and said I’d like to get one of these instruments to cannulate the bile duct. The surgeons on the committee said, “Are you crazy?” They wouldn’t buy it, so I had to do a drug study and raise the money myself. I used to pay my children a nickel for making the double pigtail stents. Then it got to be a quarter. It was getting to be expensive.”

— David Zimmon