In a European heart-shaped country, at the boundary between East and West, Romanian cardiologists are still searching for their place and identity in modern cardiology. But Romanian cardiology is here, and has a past, present, and future.

On the one hand, the past means the medical culture and history to which Romanian scientists, either founders of Romanian cardiology such as Daniel Danielpolu, MD, C. C. Iliescu, MD, or promoters of universal medical progress like Toma Ionescu, MD, and Henri Coanda, MD, have brightly contributed. On the other hand, the past also means a long period of communist dictatorship, during which Romania was more or less isolated from the Western world not only physically but also with access to new health programmes, modern treatment options such as valve prostheses and pacemakers, and the latest medical information.

Since 1989, Romanian medicine has suffered from the difficulties of making the transition to a functional democratic society. The relatively small number of doctors (188.9/100,000 inhabitants), as compared with 350/100,000 inhabitants in the European Union, encountered an increasing incidence of cardiovascular risk factors (hypertension, smoking, obesity, diabetes) and, as a consequence, an increasing prevalence of cardiovascular diseases. Against the background of an increase in general mortality in Romania, deaths from cardiovascular diseases show an upward trend (62% of total mortality), a situation that is also found in other Eastern European countries.

Hypertension accounts for 12% of cardiovascular deaths, ischaemic heart disease for 20%, myocardial infarction for 13.12%, and cerebrovascular disease for 33.46%. Contributory factors to this data include a healthcare system in Romania that is almost entirely financed from the state budget, and an inconsistent public health policy (16 Ministries of Health in 15 years) with a very low healthcare budget (only 3.8% of the gross domestic product, estimated at US $171 billion in 2004). There is also a lack of support from the media in the fight against cardiovascular risk factors, and cardiovascular disease prevention programmes are underfinanced and inefficient.

Tertiary cardiology centres (supplied with catheter, electrophysiology and pacing facilities, and cardiovascular surgery) are not only inadequate in number (a total of 7, of which 3 are in Bucharest), but also insufficiently endowed with human and material resources.

Although there are a number of cardiologists with excellent expertise by international standards, interventional cardiology was ignored for a long time. In the 11 interventional cardiology centres covering a population of 22 million people, 675 coronary angiograms are performed per million inhabitants, while other European countries perform on average about 3000 coronary angiograms per million. Although Romanian statistics are not favourable, significant progress has certainly been made. Only 10 years ago Romania held the last place in this field, with only 67 coronary angiograms and 12 coronary interventions per million inhabitants.

The number of pacemakers and implantable cardioverter defibrillators inserted in the last few years has increased, but the situation is well below the needs of the population. For example, in 2004 the total number of pacemakers implanted was about 1800 (72 per million inhabitants) as compared to the European average of 450 per million.

However, there is a bright side to Romanian cardiology. We have a powerful National Society of Cardiology, whose main goals include promoting and enhancing the scientific level of its 961 members, supporting and contributing to the development of healthcare programmes, and disseminating diagnostic and treatment guidelines in medical practice. The Romanian Society of Cardiology has organized the annual National Congress of Cardiology since 1967. There is international participation, increasing numbers of scientific presentations and working groups, symposia, and continuing medical education courses.

Since 1989, there has been free access to medical information,
Historical Cardiology:  
Dr Adam Hammer

Diana Berry writes about the physician who made the first ever antemortem diagnosis of a coronary thrombosis.

Dr Adam Hammer was a remarkable man who was the first physician to correctly make an antemortem diagnosis of a coronary thrombosis. Born in 1818 in Mingolsheim, Germany, he trained as a physician at the University of Heidelberg and was also a political radical who emigrated to the United States after taking part in an attempt to abolish the German monarchy in 1848. He served in the Union Army during the American Civil War, and in February 1855 he founded the St. Louis College of Medical and Natural Sciences, although it did not survive for long. He returned to Europe in 1877, and it was in Vienna that he made his historic diagnosis, just one year before his death.

The patient was only 34 years old and was described as being of athletic build and a heavy beer drinker, and was recovering from an attack of rheumatoid arthritis, not rheumatic fever, as might seem more likely. Dr Hammer described a man who suffered a sudden collapse whose pulse rate before this incident was 80/bpm, but half an hour later was only 40. This slowing of the pulse continued, and after 9 hours it was only 16/bpm, and by the next morning it was at an alarming 8/bpm. There was some cyanosis and dyspnoea. Percussion nor palpation suggested any heart abnormality, but auscultation produced a peculiar finding.

Dr Hammer reported, “The heartbeat was weak, one beat every eight seconds regularly. After the systolic and diastolic heart sounds, weak but audible and without bruits, there followed a clonic spasm of the heart.” Dr Hammer went on to describe this as being akin to a state of delirium tremens that lasted about 5 seconds. There followed a brief silence of 2 seconds, then a normal contraction of 1 second. This pattern continued for some 20 minutes. He was puzzled by his findings and attempted a diagnosis on the basis of exclusion. “The symptoms did not fit fatty changes or a dilated heart,” he wrote, and “there was no evidence of a central nervous system abnormality.”

There was also no evidence of infectious disease or increased blood pressure. Without the benefit of any other diagnostic tools, Dr Hammer relied on his intuitive belief that the patient was suffering from a “disturbance of the nourishment to the heart,” possibly caused by the thrombotic occlusion of at least one artery. His patient managed to survive a further 19 hours in this condition. At postmortem, Dr Hammer was proved correct when an occluded coronary artery was detected. This discovery vindicated his diagnosis, overcoming the doubts of his colleagues, who proclaimed that they had “never heard such a diagnosis in their lives.”

Diana Berry is a medical historian and freelance writer.

Reference
Pioneers in Cardiology

Patrick Serruys, MD, chief of interventional cardiology at Erasmus University in Rotterdam, Holland, discussed his involvement with interventional cardiology and his future plans with Jim McGuigan, BSc.

Who was most influential in shaping your career?

It was Paul Hugenholtz, MD, chief of the Erasmus Medical Center in Rotterdam. I had originally planned to go to Minneapolis, but when I went to see about a position in Rotterdam in 1976 I was so charmed by Dr Hugenholtz that I never left. He was an American of Dutch origin, and was so energetic and inspirational. I had been too hesitant in pursuing my own career plans, but he really gave me great self-confidence and the opportunity to develop a range of skills, including angioplasty and thrombolysis.

What led you into interventional cardiology?

I wanted to study philosophy, but my father said I should do something more relevant to life in the 20th century. So I studied medicine as well as philosophy at the University of Leuven in Belgium. It turned out that medicine had the greater attraction for me, and after working in the catheter laboratory at Leuven University Hospital in 1976, I went to the cardiology department at Erasmus Medical Centre in Rotterdam. I had only been there a year when Andreas Grüntzig, MD, carried out the first balloon angioplasty in Switzerland in 1975. Almost overnight my colleagues and I became interventional operators. I found this such a fascinating and rewarding activity — you inflate a balloon, and within seconds you drastically change the anatomy and the physiology of the coronary circulation. Once I had started, I could never stop.

Was there a seminal point in your career?

Yes, the day I pushed metal into the coronary circulation. Looking back, it was a strange thing to do. It’s not normal to put metal into a small vessel because you’ll get a clot. I felt a bit guilty. The turning point for me was when I saw how unbelievably good the results were. I realised then that stenting was going to deeply modify the whole approach to the disease for the next 30 years. Jacques Puel, MD, implanted the first stent in a human coronary artery in March 1986 and a month later Ulrich Sigwart, MD, performed his first stenting procedure in Switzerland. I began stenting a few months after that in September 1986. I collected data on the first 106 patients and wrote a paper for the New England Journal of Medicine in 1991. Afterwards I felt awkward that I had been so negative about this wonderful new technology. Then, in 1994, in the same journal, I reported the Benestent study — the first randomised trial of stenting versus balloon angioplasty. This paper, one of the most highly cited in cardiology, really put stenting on the map. This was especially important, as in those early days there was no industry sponsorship. We were criticised for doing this trial; stenting was perceived as dangerous because of the risk of generating thrombosis and closure of the vessel. In May 1993, it was rewarded to see the stent gain US Food and Drug Administration approval after 6 previous applications had been refused!

Which of your many awards has given you most pleasure?

Two stand out above the rest: The first was in 1996, when I received the lifetime career achievement at the Transcatheter Therapy Conference in Washington, DC. I was suddenly asked to go to the main arena. There I saw on the main screen photographs of me as a child, a student, and a doctor. And just as I was thinking about how to respond to the 7000 or more people in the theatre, I saw my 84-year-old father on stage with my wife, my mother, and my 3 children. I just couldn’t believe it. It was the most emotional moment that I’ve ever had, and I completely forgot my speech.

The Paul Dudley White Lecture at the American Heart Association meeting in Anaheim, Calif, was also memorable. The lecture was called “If Andreas Grüntzig were to come back...” The mood was generally low-key, as the meeting was not long after the terrible events of September 11, 2001, but the audience seemed to enjoy hearing the story of how we got started with stenting. I had photographs of the 4 specialists who pioneered the technique and interviews with the first patient to undergo stenting. At the end of the presentation, I saw people getting up, and I thought they were moving because of a leak in the roof. Then, as more and more got to their feet, I realised I was getting a standing ovation — the first in my life. It was an unforgettable experience.

What do you consider your main contributions to the field?

Most of the time I am not a pioneer, but I follow closely behind the pioneers. I see my role in the development of stenting as the person who introduced scientific rigour into the analysis of the results. I pushed for randomised trials and quantitative analysis of the data. This was important, as the technique could have been killed in infancy by a non-critical approach. But when the Benestent trial paper was accepted, it meant that after 8 years of intensive research the benefits of stenting were widely acknowledged, and interventional cardiology entered a new era. I am also very proud of the results we achieved in the Randomized Study With the Sirolimus-Eluting Bx Velocity Balloon-Expandable Stent (RAVEL) study, which was presented at the European Society of Cardiology meeting in Stockholm, Sweden in 2001. This was the study with the sirolimus-eluting balloon expandable stent in the treatment of patients with...
de novo coronary artery disease. I found out about plans for clinical trials of the rapamycin (sirolimus)-eluting stent in the United Sates and became involved. I persuaded the researchers that their trial design was too simple and they needed more quantitative analysis, including quantitative angiography. I ended up designing the trial. The results for the first 45 patients were unbelievable; at one year the percentage of patients with restenosis was zero. You are lucky to get results like these once in your career, and they brought in the new era of the drug-eluting stent.

**How does today's intervention compare with bypass surgery?**

We will have to wait 5 years for the results of a major randomised SYnergy Between PCI with TAXUS and Cardiac Surgery (SYNTAX) trial that we are carrying out on patients with 3-vessel disease from 82 centres in the United States and Europe. Worldwide, the ratio of angioplasty to bypass grafting is 3:1 and is increasing. My rosy prophecy is that the percutaneous approach will have results equal to surgery.

**What new developments are in the pipeline?**

We need to eliminate the metal from stents. The metal is a cage that cannot be made larger, and it is there forever and prevents further action such as putting in another stent. So we need a stent that disappears after it has done its job, and we are already working on the next generation of bioabsorbable and biodegradable devices. The animal work is there, and we are going to start with patients very soon. We are also testing new agents that inhibit smooth muscle cell proliferation and prevent tissue proliferation and migration but that don’t interfere with the rebuilding of the endothelium.

**Are there differences in practice on either side of the Atlantic?**

Yes, there are. Europeans are more critical. The most frequent American words are “I’m excited,” but a European will try to prove he is intelligent by trying to find the weak point of the theory. When I’m working with an American I try not to be too critical because they perceive that as a sort of personal attack or a lack of interest, optimism, or enthusiasm. But for Europeans, being critical is paramount — we are educated that way at school.

**How do you relax outside medicine?**

I’ve always been a workaholic, but every July since 1985 my wife Danielle and I take our 3 children for a wonderful relaxing family holiday together in Hawaii. No mobile phones, personal organizers, or computers are allowed. We also go for breaks in the Dutch Caribbean island of Bonaire, where we all go diving and film underwater life and shipwrecks. I get very little time to read outside of cardiology, but if I get the chance I enjoy fine art books and paintings, especially the works of Leonardo da Vinci.

**Have any of your 3 children followed you into medicine?**

No, they have been put off by my long hours! My son Michael, now 34, is a historian. He teaches at the University of Leiden, Holland. Gregory is 26 and is in the food business, and my 21-year-old daughter, Olivia, is a criminologist.

**Jim McGuigan is a freelance medical journalist.**

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**Journals Focus**

**Editor-in-Chief Eduard Apetrei, MD, (pictured) and an associate editor, Ruxandra Jurcut, MD, both of the Romanian Heart Journal, are enthusiastic about planning its future.**

The Romanian Heart Journal already has a long history behind it. It was first published in 1944 as the Revue Roumaine de Cardiologie (Editor-in-Chief Basil Teodorescu, MD,) by the Romanian Society of Cardiology, which was led at that time by Daniel Danielopolu, MD. Publication was then interrupted during the troubled times in Romania between the 1950s and the end of the 1980s. The journal has appeared again continuously since 1991. In 2005, the journal was published in a changed format, with a new editor-in-chief, Dr Eduard Apetrei, and there are now ambitious projects planned for the future.

The Romanian Heart Journal is now a peer-reviewed journal, with an editorial board of 45 experts in the field, including 13 prominent cardiologists from European countries and the United States. Each issue contains one review article, as well as a number of original articles, a column of highlights in cardiology (consisting of short notes on new studies, new guidelines, and other brief information), and a section with images in cardiology. There is also a section that includes medical statistics that is well received by readers.

The journal also publishes proceedings of cardiology conferences and symposia that take place during the year. In order to make European Society of Cardiology (ESC) guidelines better known to the Romanian medical community, every issue now contains a translation of a diagnosis and treatment guideline or other statements from the ESC, carried out under their auspices. All the articles also now have an abstract in English, and we warmly welcome contributions from cardiologists in other countries.

The journal has already published papers from Sweden and the United States in their original English. One of the main targets for the near future is the admission of the Romanian Heart Journal into international medical databases so that it is fully represented overseas.

A further development planned by the editorial board is to publish all original contributions in English to help the journal break through the language barrier. As a result of these initiatives, it is hoped that Romanian cardiological research results will become accessible to the international scientific community, and will therefore be open to worldwide discussion and collaboration.

**Dr Apetrei is professor of cardiology at the Professor C.C. Iliescu Institute of Cardiovascular Diseases, Bucharest, Romania. Dr Jurcut is a teaching assistant in cardiology at the same institute.**