MENTORS IN ORTHOPEDICS

CARSTEN PERKA

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SUMMARY

Professor Carsten Perka's trajectory from the former German Democratic Republic to the medical directorship of the Charité reflects a career defined by institutional continuity and clinical rigor. Initially drawn to medicine following a personal encounter with osteomyelitis, he has since shaped German arthroplasty through leadership in the DKOU and the national registry. His focus remains on translational medicine, bridging regenerative science and surgical practice, while emphasizing that theoretical mastery must always precede technical execution in the operating theater.

Prof. Carsten Perka is one of the three presidents of the DKOU 2019 and the medical Director of the Centre for Musculoskeletal Surgery at the Charité in Berlin. He is an internationally well recognized arthroplasty surgeon and member of the International Hip Society and the European Knee Society. He has also served as President for the AE (Arbeitsgemeinschaft für Endoprothetik, Germany) and is member of the steering board of the AORecon (Arbeitsgemeinschaft Osteosynthese) and Educational Chair of the Society. Starting in December he will serve as General Secretary of the German Arthroplasty Society (AE).

What is the major topic at DKOU this year?

> No knowledge without values. We have learned over the last decade that more science alone is not helpful for our patients. We see that patients don't really understand what we are doing and get more and more confused. We want to focus more on patients' needs and follow the existing evidence. We all know how many of the clinical results depend on companies and are therefore biased. We really try to discuss together what is necessary to know, has an influence on our daily work and what is scientifically based. This sounds very easy, but we know that there are a lot of controversial topics for orthopaedics and trauma. For example, thromboprophylaxis in Germany. The recommendation is still to give prophylaxis for 35 days after total hips, which stands in contrast to many other counties.

Will you use new ideas or formats to discuss these topics?

> One of the new formats will be a virtual lab to teach surgical techniques in several rooms. There's a huge interest of younger surgeons especially from smaller hospitals. They have no chance to test or try something in bioskills labs. There are several ideas to involve more patients. For example, we will organize a huge seminar for patients organised by the German Rheumatism League. This seminar will host a lot of interesting speakers, the German minister of health has also been invited. The German Rheumatism League has more than 300,000 members, so there's interest for politicians and experts from all over the field of orthopaedics to show up.

Who will be the 2019 guest nations

> It will be Canada and Italy. We have invited ten excellent surgeons from Canada and many additional guests from Canada are expected to come. Due to the close neighbourhood we will have

a much bigger number of attendees from Italy. There will be specific English sessions with the guest nations. DKOU more and more goes international and we are very happy about that. Several international societies will be involved like AO trauma, AORecon, European Knee, Hip, Spine and Paediatric societies. They will organize their own meetings in English language. We will have many guests from China, since we have established a very fruitful cooperation with China since some years. There will be three sessions together with our guests from China.

The idea to go more International was to bring German knowledge to other countries or to bring international speakers to Germany?

Of course, both. But you're absolutely right. For the German Surgeons it is more important to learn from other countries. The time researchers have to spend for their daily work in clinical care increases and the time for travelling to other countries or go on international fellowships is decreasing. So DKOU offers once a year the opportunity to listen and discuss with some of the best speakers from all over the world. So, I think it's a little bit more the input from other countries to Germany then really to show what Germany is able to deliver. If you intend to present the German scientific work I think you should aim for EFORT, AAOS or other international meetings.

DKOU has managed to be the largest scientific and orthopaedic-trauma event in Europe. How can you explain this success?

There are two main reasons. One for me is the language. Because the German speaking community in Europe is large and surgeons especially in Germany but also in Austria and more and more in Switzerland want to have a high-level international scientific meeting where they can present their results in their own language. Number two is the chance to listen to the key speakers from Germany, Austria and Switzerland. Meanwhile we can really get the speakers we want to have. This makes the difference to most of the other meetings, where many speakers are not available or some of them cancel 5 minutes before the session starts. These are for me the two main reasons and perhaps the third one is the unbelievable support by the industry.

How do you see the role of trauma and orthopaedics in Germany compared to the rest of the world?

Well, my feeling is that the German Trauma Society has a huge international influence. The reason is the AO (Arbeitsgemeinschaft Osteosynthese), as a primarily English but also German-speaking society, which is so strong worldwide. AO courses are held in many countries and are the prerequisite to get your certificates for many of these countries. Many German trauma surgeons are really engaged in this society and spend a lot of their time within its activities. I think AO is one of the strongest trauma organisations worldwide. In Orthopaedics it is a little bit different. I think there is much more scientific competition worldwide and as mentioned before, the scientific output of German Orthopaedic Surgeons has decreased over the last years. Nevertheless, we try to bring Trauma and Orthopaedics together. This year we will have for the first time a common business meeting of the three existing German societies (Trauma, Orthopaedic and Trauma & Orthopaedic Society). This might be difficult to understand for people from outside Germany, but this is a real step by step process. All three societies are afraid of losing something, but this year for the first time the DKOU will be organized by all three societies represented by the DGOU.

Traditionally Trauma and Orthopaedics were separate in Germany - when have you started this uniting process?

> We started in 2003 but that's a very, very slow process. At the beginning there was a lot of enthusiasm but then, as always, some mistakes have been made. But meanwhile the next generation of young surgeons are trained in orthopaedics and trauma. I'm convinced that we will overcome the problems and really be able to unite both fields. I think other countries have made the same experience and all depends on the acting people. I think it depends more on the people than on the controversial contents.

There's a new topic, the German arthroplasty register. What is the situation at the moment?

> The situation in the moment is that we are really very successful. More successful than we believed because it is a voluntary system, and nothing is mandatory. We started in 2012 and we have already 1.2 million cases in the registry. It is organised by the insurance companies, the industry and by the doctors together. Since last week there's a first attempt of a new law for Germany that the register will be mandatory for everybody. I think this is a huge success. We worked very hard over the last years and can show what the advantages and disadvantages are. We will start with the implants but, of course, we have to discuss the performance of the hospitals in the future as well. I believe the differences between hospitals will be more important than the differences between implants.

Can you give me an example of the most surprising/important outcome of the German register which has a direct influence on daily practice?

> We have found in Germany a clear correlation between the number of implantations and the complication rates. This will require the discussion about what the minimum number of operations is that you have to do per year. Futhermore, one of the most specific problems we identified are concerning Vitamin E inserts. Although it is worldwide one of the most successful polyethylenes, in the German registry we see about 50% higher revision rates within the first six months. This is an example why it is so important that the conclusions are made by doctors, not by statisticians. It seems that the reason for this early high revision rate is that very often the Vitamin E poly was introduced in the clinic together with new implants and the learning curve of the new implant might be the reason for the high early Vitamin E poly failure. Another interesting example is that we found a higher loosing and higher revision rates with metal heads compared with ceramic heads in THA. This seems to be a problem of the implanted numbers. Metal heads are used normally in the smaller hospitals because they are cheaper for them compared to the bigger hospitals, which buy higher amounts. There are further interesting observations and we do have not an explanation for all of them, yet.

In Germany, the numbers of arthroplasties per 100,000 people is higher than in the rest of Europe. What is your opinion?

> It is higher, there is no doubt. I think the number one reason is that everything is covered by the insurances for everybody. The operation and in addition, the three weeks stay in one of the rehabilitation units. These rehab centres offer a service like a hotel, which is better than one, that many of the patients could pay for themselves if they want to spend their holidays. Number two is that people ask for more activities, such as hiking and skiing. 20 years ago, it was enough to walk and sit. Furthermore, we know that all our conservative therapies are not good enough to offer

this outcome to the patients. In addition, from my point of view, we meanwhile have a system where the operation is much cheaper than all the other treatments. There are not many options for the doctor anymore and that's why they decide and tell the patients "a total hip or a total knee makes more sense in your specific case and we can finish the treatment in a very short period of time". For standard patients, you get 6,000 Euro for a total hip including the one week stay in the hospital and about 7,500 for the knee. That's not really attractive and money is not a driver anymore. It was a driver in the past, but not today anymore.

How can you describe the role of the AE in Germany? What is the advantage of this society?

AE is also called the German Arthroplasty Society. The society is managing all the topics in relation to arthroplasty. My feeling is that the training programme in the meanwhile is one of the best in the world, AE offers up to 30 courses per year. Most of the courses are fully booked. It is more and more the society for all German-speaking countries. We have not only meetings in Germany but also in Austria and Switzerland. AE is responsible for training and education, but also responsible for the scientific output and that's still limited and a problem. We have something to do for the future.

What is the history of Charité and its current role in orthopaedics and trauma?

The hospital is more than 300 years old. And we have an orthopaedic department since more than 130 years and there is a lot of tradition. In 2003, we merged the orthopaedic with the trauma department. To understand this a little bit better, you have to know that Charité has now four different locations in the city. Three hospitals and one research unit. So, meanwhile, we have an institution with 75 doctors. We have a lot of scientific activities, like the Julius Wolff institute and the Berlin Institute of Health Centre for Regenerative Therapies. We work together with all the other universities in the city. And our center at the Charité performs a little bit more than 10,000 operations per year with +/- 200 beds. Charité is Europe's largest university hospital We have in our center a co-leading system of a trauma and an orthopaedic chair, which works very well.

You are currently the medical director of the musculoskeletal centre. Your predecessor - was he the pioneer in bringing this together?

Prof Haas had a lot of visions. Of course, he was also very strong in politics and he could exert a lot of pressure. That's why during all this time not all of the colleagues were enthusiastic about this new idea, and we lost many doctors at this time. But meanwhile I'm convinced there are more advantages than disadvantages. Meanwhile Prof Haas is more enthusiastic and more interested in orthopaedics than in trauma. He is in the steering committee of AORecon and not of AO trauma anymore. So, he is meanwhile doing a lot of arthroplasty work.

You're talking about the Center for Musculoskeletal Surgery as one of the leaders in Germany. You have the traditional biomechanical Julius Wolff Institute - what was the development of this institute?

It was one of the things we have learned that, if we put our laboratories and our scientific work together, we need a specific institution because science has changed over the last decades. You have to know where the political support is, where you can expect money and grants. Prof Duda is the director of this institute and a great member of the staff. He really developed new strategies. It's growing and growing. We have meanwhile the biggest sports institute in Berlin and are responsible for internal medicine for all teams in Berlin like ice hockey, football, handball, volleyball and we are growing more and more in orthopaedics in this field as well. It is

> unfortunately very time consuming but very prestigious. I expect even more in the future, but it makes sense to bundle all the activities - especially in the research field, otherwise we are lost against all the competitors from other European countries, Japan and the US.

In the Charité the Berlin Institute of Health Centre for Regenerative Therapies has also been established. This is a new development.

> That was a newer development under the influence of the worldwide results of scientific developments of the regenerative therapies. This new institute was founded and supported by the government of Berlin. We have got additional money and we are still under construction. We will build next year a GMP facility which will include a minimum of six laboratories in 2023. We really believe that regenerative therapy will not replace the old therapies but will have a strong influence especially in the modification of diseases in the future. That's what we expect for the next ten years and that's why we all believe this is the right way.

Do you personally have an idea how to bring this scientific development to the daily practice in your centre?

> It is all about translation. Translational medicine is a very frequently used word. We will have a Professorship as chair for Translational Medicine next year. We have done a lot of clinical studies with stem cells for muscle and bone regeneration. We are currently leading a huge EU study founded with 7.5 million Euro from the EU. The future is regenerative therapy and it's all about translation. And that's why you need both things together. It is not helpful to have this scientific building far away from the clinic. There's the real advantage in what we have planned here. Science and clinics are really door by door, that's why I think it will work well in the future.

Will the next generation of students get this new development during their studies

> Absolutely. We are interested in every student and in conveying the latest developments of our field. The problem in Germany is that the training in the universities is influenced more and more by the theoretical fields. But we are trying to regain our status there also by the establishment of new teaching formats and by picking students up already in early phases.

How was your medical career? You grew up in the former German Democratic Republic – "DDR". Did you decide very early that you want to become a doctor?

> No, it was never my plan. It was an idea of my father and perhaps a bit modified by myself since a severe accident in 1979. A ski accident with a broken femur and a consecutive severe osteomyelitis perhaps influenced my decision a little bit. My father was convinced that there is only one way to survive in the DDR. To study medicine - because this study is accepted worldwide, and you can go to west Germany or Austria because the DDR will not survive. Nobody in my family ever did anything in medicine.

Your training started at Charité.

> Yes, I spent my whole life here, the most terrible CV that you can imagine. Some weeks ago I was interviewed by Focus, one of the leading newspapers in Germany. They asked for my CV and then they called me back and said that it would be not enough to send my last position only. It was difficult for them to understand that I have spent all the time here at Charité where I studied and started my whole career. I did many attempts to leave the university and the hospital but there were always some reasons to stay. Mostly money or an offer for a better position to stay. Completely untypical and uncommon in Germany that you have worked in the same hospital

since being a resident, where you are now the medical director. I have still some nurses who know me as a student, and we have a special relation to each other.

What do you remember about 1989 and the fall of the Berlin Wall?

I was a student and unfortunately, I was not in Berlin because we had a seminar about the environment in different lakes around Berlin. I was somewhere in the middle of nowhere when I received the information. I came back one day later because we finished the seminar immediately. I therefore do not have a real personal experience of this historical day, but I have seen a lot of changes in the following time and was impressed that the wall was open. I think it was a Friday and next Monday the former head of the Orthopaedic department, Professor Zippel decided to kick out all the members of the state security service of the DDR ("Staatssicherheit"). I was really impressed when he said you, you and you can do what you want, but you have nothing to do in my clinic anymore. This was the time where it became absolutely clear to me, what it would mean, that the wall was open and the time of the DDR had ended.

He was strong enough to kick the politicians out of the hospital?

Completely, he was one of the three directors from East Germany who kept their positions. There were at this time 60 directors of different units at Charité and he was one of the only three, who were not in the Communist Party. He felt strong enough and his whole life he was always straightforward. I was surprised. If you spent your whole life in this system, you couldn't imagine that this would be possible, but he did it and it was the right decision.

After the reunification, was it easy for the Charité to keep its leading position in Germany

I think it was difficult and on the other hand somewhat easier. The reason that it was not so easy was that we had lost a lot of leaders. And not everybody who had worked with the DDR security or was member of the Communist Party was a bad doctor. There were a lot of excellent surgeons and scientists and we lost all of them because of their political activities in the DDR. A further problem was that we had a lot of new doctors from the western part of Germany. For many of them there was no chance to get a good position in West Germany, so they looked for another option and then they moved to the former "DDR-area". Until about 2000 we had to suffer from the loss of quality after the unification, but since then we are gaining strength year by year

Did it influence your personal career?

I started my medical career in 1991, that means the wall was already down. The real advantage was that within half a year all arthroplasty surgeons were not any longer in the hospital. After two years I started already to do almost all arthroplasty surgeries. I am sure there was a learning curve, but I was excellently managed by my former head professor Zippel and professor Schellnack (the inventor of the artificial disc prosthesis (SB-Charité). There were only professors and very young doctors and I did more than 1,000 arthroplasties within the first years of training. That was the reason why I focussed on arthroplasty later. At this time, we had no options to travel and English was not my favourite language. I had some English at school but only some hours. We all had to learn Russian, but no one was interested in Russian anymore and we had to learn English for communication.

Are you a fan of specialisation?

> I'm really very happy that I had the opportunity to learn or see all fields because there was someone who took care of me and said, arthroplasty is fine, but you have to see the other things as well. But meanwhile, specialisation is more and more the current trend. We have many young doctors who come to the hospital and apply for a position. Their first question is are you able to deliver the whole treatment and training. It means all fields including arthroplasty, trauma, tumour, rheumatology, hand surgery. We are able to offer this training but after 3 to 4 years of rotation they come and ask to be more specialized. For example, they feel very well with the shoulder surgeons and they want to skip tumour surgery. Specialisation happens earlier and earlier. The advantage is that we can do more and more fancy things. The disadvantage is that it is more and more difficult for surgeons to understand that not each pain in the knee really does come from the knee and there are very often other reasons. That's the problem of specialisation and no one looks for the whole patient anymore. That seems to be my real concern with specialization and we try to train our residents accordingly to counteract these problems, but for all the operating procedures it's definitely the future.

You have published a lot. Do you remember the most influential paper you published?

> That's difficult to answer. The most influential is normally not the best-published paper. I think the most influential paper we have published was a very unknown paper in a small German journal. It was dealing with the treatment of high hip dislocation using THA. The second one was a paper in the Journal of Arthroplasty about reasons and failures for reinforcement rings. We received a lot of response from all over the world. At this time most of the orthopaedic surgeons could not believe our message, but we were right as has been proven later. The best papers are the last papers we have published because our scientific quality has become better and better. We did a lot of work about the importance of immune regulation, about diagnosis and treatment of infections and then the papers on regenerative therapies.

Do you still have time for any hobbies?

> Not so much anymore, which is a real problem. The most important one is my family obviously. I do sometimes sport, but not regularly.

Your family, and especially your wife, is supporting your career and time management?

> Yes, she has always been supporting me, however the time I have to spend for work is, of course, always a matter for discussion at home. Because it's not only the time in the hospital but I need more and more time to travel around the world which often includes weekends. About 35 weekends per year I travel and that's a problem. I have three daughters and my wife manages the family perfectly and that's perhaps the best support that you can get. If you know you have no problems at home, then you can do more or less a perfect job at work.

If you could go back would you restart a career as a doctor?

> I think yes, because it is great to be a doctor if you are successful and because, then, it's normally easy to say ok, I would do the same things again.

What would you recommend a junior doctor - what are the key points to be successful as an orthopaedic surgeon?

> That's very difficult. For me the beginning of the career is very boring with a lot of theoretical knowledge. The problem today is everybody believes if you start a career as an orthopaedic surgeon the challenge is surgery. Surgery is easy to learn but the problem is always the theoretical knowledge and the most frequent mistakes happen due to improper planning. The limitation for most of the surgeons are not the surgical skills. That's why I am sometimes a little bit sceptical with some modern teaching methods. If we have adequate theoretical knowledge about anatomy, biomechanics, materials and options, then the operation is the easier part. It means in my department we have much more people who can operate nicely then ones being able to write an excellent paper. All the orthopaedic surgery for me is based on theoretical foundations and not merely the manual work, which is less difficult and decisive. The difficulty does not come from the daily need for training. There is more need for knowledge from the literature that you have to read, which allows you to discuss with colleagues. Orthopaedics looks so practical but in the end, the theoretical work is more important.

Thank you Prof Perka for this interesting and personal interview. We wish you all the best for your future.