

WERNER FORßMANN, EBERSWALDE, THE 1956 NOBEL PRIZE FOR MEDICINE

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Abstract

Since October 1949 Werner Forßmann was a regular guest of Prof. Dr. Hugo Wilhelm Knipping in the Medical University Clinic of Cologne. Established himself as urologist in Bad Kreuznach, Werner Forßmann had read about the American further development of heart catheterization, which was invented by himself. Prof. Wilhelm Bolt, who was one of the medical station doctors of the Cologne Clinic, had already learned the technique of heart catheterization in 1947. Thus, it was routinely performed in patients at the Cologne University Hospital. A close collaboration between Werner Forßmann and our research group (Hugo Wilhelm Knipping, Wilhelm Bolt, Helmut Valentin, Helmut Venrath, Hans Rink, Wildor Hollmann) was established. After the notification that Werner Forßmann had been awarded the Nobel Prize for Medicine in 1956, Hugo Wilhelm Knipping instructed me to help Werner Forßmann with the preparation of his lecture. Details of events in the year 1956 are illustrated. One of the important developments in which Werner Forßmann participated with the Medical University Clinic of Cologne was the selective pulmonary angiography (see Bolt et al. 1957).

It was in October 1949. A short while before a colleague and I had begun our practice oriented doctoral thesis on a new type of spiroergometric equipment at the German Sport University Cologne (Fig. 1). The telephone rang and our supervisor, Professor Knipping, Director of the Medical University Clinic, Cologne was on the line (Fig. 2). He explained that Werner Forßmann, the famous inventor of the heart catheterization would like to see our new equipment and that we should be pleasant to him.

There would be no doubt about that! Forßmann was an idol for us. With themselves as guinea pigs, the medical station doctors Bolt, Valentin, and Venrath had begun to test heart catheterization at the Medical University Clinic as early as 1947 (Fig. 3). From 1948 these were carried out on patients.

We only knew Forßmann by name. He had, in the meantime, established himself as urologist in Bad Kreuznach. He often visited the Cologne Clinic and the heart catheter team there on many a Wednesday afternoon. At that time this team was the first of its kind. It was in this way that I got to know Forßmann. Again using himself as a guinea pig, Bolt developed

the selective angiography for lung vessels in 1949 (Fig. 4). One of his colleagues suffered an anaphylactic shock and was in a critical condition for a short time. In the then completely destroyed Cologne and the likewise destroyed facilities of the University Clinic, such personal tests were a matter of course for the doctors employed there. We had survived the war and considered ourselves indestructible.

My next experience with Forßmann was in connection with the fourth World Congress of Chest Physicians in Cologne in 1955 (Fig. 5). In particular American doctors, led by President Eisenhower's personal physician, Dudley P. White spoke in glowing terms of the celebrated Forßmann during their appearances as presenters. This caused Knipping to approach the Medical Faculty of Mainz University with the request of presenting Forßmann with an honorary professorship. Knipping himself wrote an appraisal to this end. Mainz University, however, replied that they would not be doing themselves a service in honouring a practicing physician and refused the request.

On 8th October 1956 Forßmann was officially informed at his practice in Bad Kreuznach, that together with the American professors Cournand and Richards, he had been awarded the Nobel Prize for Medicine (Fig. 6).

On the day before this incident, Knipping had telephoned Valentin and asked him to be prepared to take coffee and cake at his, Valentin's laboratory, the following day at 4.30 pm – this was the largest laboratory at the University Clinic at that time. Valentin should also invite his own wife, who worked there anyway, Bolt, Venrath and Knipping himself. Valentin informed us of this and grumpily said that "The old man has finally flipped his lid". Venrath could only agree.

As planned the coffee party took place the next day. Shortly before 5.00 pm Knipping instructed Valentin to turn on the radio and tune into the WDR 5.00 pm News. None of us knew what this was about. We had no television anyway and Knipping was a declared adversary of listening to the radio ("waste of time"). The first item on the 5.00 pm news was: the German doctor Werner Forßmann, practicing physician in Bad Kreuznach, had been awarded the Nobel Prize. This news hit us like a bolt out of the blue. Knipping smiled, because a good friend in Stockholm had informed him in advance. Our enthusiasm was absolute-



▲
Fig. 2. Univ.-Prof. Dr. med. Dr. h. c. mult. Hugo Wilhelm Knipping.

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Fig. 1. Starting of a spiro-ergometric investigation in the German Sport University, 1949.

Fig. 3. Some lines out of the text book of cardiology by Knipping et al., 1955.



Bei unseren ersten Herzkatheterungen an der Medizinischen Universitätsklinik Köln (Bolt, Valentin, Venrath 1947), die wir in Selbstversuchen durchführten, spritzten wir einem unserer Mitarbeiter ein bekanntes Antikoagulans, wie wir es jahre-



Fig. 4. Selective angiography of the lung vessels, performed in Cologne 1949.



Fig. 5. Forßmann and the author at the Congress of Chest Physicians, 1955. ▶

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Aufgenommen		Obermittelt	
Tag: 8. Okt. 1956	Monat: 10	Tag:	Zeit:
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DOKTOR WERNER FORßMANN BADKREUZNACHRHEINPROVINZ =			
DAS KAROLINISCHE INSTITUT HAT HEUTE BESCHLOSSEN IHNEN PROFESSOR COURNAND UND PROFESSOR RICHARDS GEMEINSAM DEN DIESJAHRIGEN NOBELPREIS FÜR PHYSIOLOGIE ODER MEDIZIN ZUZUERKENNEN FÜR IHRE ENTDECKUNGEN IN BEZUG AUF HERZKATHETERISIERUNG UND PATHOLOGISCHE VERÄNDERUNGEN DES KREISLAUFS = STEN FRIBERG REKTOR +			
Für dienstliche Rückfragen		<i>Beantwortet</i>	
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Fig. 6. Telegram of the Nobel price committee.

ly boundless. The celebrations were not solely restricted to coffee on that afternoon and the following evening.

A good 14 days later the Nobel Prize Winner formally visited our clinic. A large circle of physicians were congregated in Venrath's laboratory. Forßmann mentioned that he now had to hold a lecture about the heart at the presentation of the Nobel Prize on the 10th December. For the previous 26 years, however, he had not concerned himself in any detail with this subject. In his typical temperamental way Knipping immediately interjected and declared: "We shall undertake that. We only need to address some desired area. I recommend that you centre your lecture round our newly developed spirographic-oxymetric method for determining intracardial and intrapulmonary flow times." Forßmann agreed and Knipping instructed me to undertake the "preparation" of the Forßmann lecture.

Subsequently Forßmann and I met in the clinic every evening at 8.00 pm working until up to one to two o'clock in the morning over a period of 10 days. Forßmann owned a small Olympia or Adler travelling typewriter. I dictated to him and he typed this according to the principle of "Eagle-eye": First sharply observe and then swoop. After about 10 evenings and nights the work was done. Thus my horror was all the greater, as I entered our Infection Building No. 16 as usual one morning and the on-duty night sister informed me that Dr Forßmann had had a heart attack about an hour earlier. He was lying in Ward 16a. I rushed immediately to his room. Forßmann was awake, laying in bed covered in sweat and moaned of pains in the chest. Up to that point in time only an on-duty night doctor, a still inexperienced colleague, had examined him. After cursorily examining him myself I was almost sure: the pains originated in the stomach and not from the heart. The ECG, which was now carried out, revealed the heart to be completely normal, apart from an understandable tachycardia. There was great relief on all sides, our patient, however, was kept in the ward for three days as a precaution and to expedite his recovery after the strenuous previous weeks.

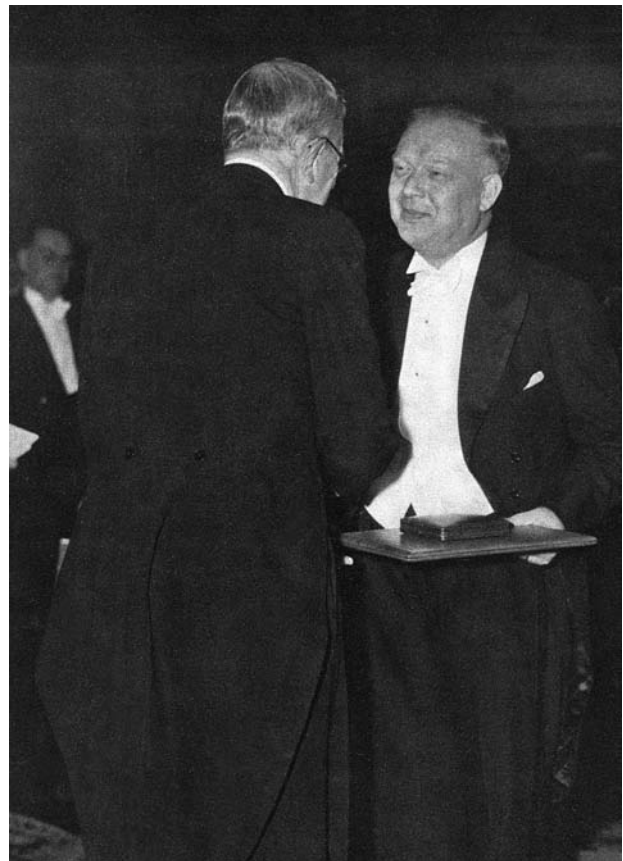


Fig. 7. The King of Sweden and Forßmann during the ceremony in Stockholm 1956.

Also the hours before the prize presentation in Stockholm were not without problems. As Forßmann explained to me later, when dressing in the morning he was searching desperately for the collar button, which according to the rules should hold the externally mounted collar together. He knew exactly that he had placed it in a certain drawer in his hotel room. However he could not find it there. After he had fruitlessly searched in the drawers above and below this drawers, he informed the reception. Help came in the shape of a hotel boy, who smartly pulled out all drawers saying that through a faulty drawer construction he had once experienced that something had fallen out at the back. This fell through down to the floor. And so it was here- there lay the monster! The Nobel Prize was saved (Fig. 7).

Forßmann now also met André Cournand and Richards. We too would get to know Cournand later as a guest at the Cologne Clinic. As he heard the news about the prize award to him, he called up Stockholm immediately with the information: "As I began with heart catheterization in the USA in 1940, I adapted solely the procedure in accordance with the literature of a physician named Werner Forßmann. Please check whether this man survived the war. If he is still alive, I shall only accept the Nobel Prize if it is shared with him".

And so it happened and Richards came as third to this union. Such noble conduct, as shown by the native Frenchman Cournand, can only be admired.



Fig. 8. Werner Forßmann.

Weeks later as Forßmann visited us again in the Cologne Clinic; he gave us many further details particular to the Nobel Prize Awards. I believe I can still remember almost everything he said, but this would exceed the framework of these short statements. Some of his narratives concern the year 1929, how he got to know the operations nurse in Eberswalde a little more closely, with the intention of having an aid when carrying out the tests on his own body. Thereby Forßmann smiled reminiscently and mentioned how the eyes of the nurse opened wide in shock, as he did not test only once whether he could go up a vein in the arm with a urological catheter, as he initially indicated to her, but pushed it further and further up to a mark which he had previously made on the catheter. Then he went into the cellar of this building where he had previously prepared an x-ray machine for the purpose of ascertaining that the catheter had actually entered the heart and he was evidently still alive, which was in contrast to the official medical doctrine at that time.

As is generally known Forßmann was dismissed immediately after this test on his own body became known, and his last hope was Professor Sauerbruch, who himself had covered so much new territory in medicine. In essence Sauerbruch explained to him that he might appear in a circus with such tricks but not practice further as a doctor. If he had his say, he would have had him struck off. That was the end of Forßmann's academic career.

The Nobel Prize did not only bring Forßmann happiness. Envy and antipathy from earlier times combined to work against him. He had to suffer a great deal, above all in the yellow press, which actively encouraged all conspiracies against him. Marked by the joy and suffering of his life, Forßmann died in his beloved Black Forest on the 1st June 1979. An American scientist said of him: "He was the typical man before his time" (Fig. 8).

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Received: January 10, 2006 / Accepted: August 14, 2006

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