János Radó: My teacher, Pál Gömöri (1905-1973)

Pál Gömöri

Introduction

Great Hungarian physicians have contributed significantly to the development of international medical science. *Pál Gömöri* was one of them. It is now the 70th anniversary of me being a third-year medical student and him my internal propedeutics professor in 1951, at Budapest University of Medicine's Clinic for Internal Medicine no. 1. It would be impossible to list the versatility of his scientific interests, but one of his ambitions was the introduction of the investigational methods of renal nuclear medicine to Hungary. I feel that my own activity in renal nuclear medicine concerning "diuretic renography" was inspired partly by what I had learned from Gömöri. His conduct in life, his professional and social achievements, his commitment to renal

physiology and renal diseases appeared to be a path to be followed by many a talented medical student.

Pál Gömöri was the first truly modern Hungarian internist: he turned from the issues of the hospital bed *to the animal testing model* and returned to the patient having solved the issue. He reproduced nearly every mechanism leading to the clinical picture of extrarenal azotaemia using animal testing (Gomori, Romhanyi, Foldi and Szabo 1954; Gomori, Munkacsi, Nagy et al. 1962; Gomori, Glaz, Suhanyeczky and Csapo 1960). In fact, it was perhaps at a lecture of Gömöri's that I heard that according to the famed American-Hungarian internist, *Henrik Lax*, the Semmelweis' tragic fate – the inability to convince his contemporaries of his truth – could be traced back to him *not carrying out animal testing* (the fact that he "was his own worst enemy," according to a 2004 *New England Journal of Medicine* review of a biographical book published in the United States could also have been at play [Nuland 2004)]). There were other internists in Hungary who conducted animal tests, including *Rusznyák, Földi,* and *Szabó;* however, most results of their experiential pathophysiological research could only be utilized in clinical medicine in a more removed and indirect manner. The immortal *Sándor Korányi,* being the genius life scientist that he was, was a more conservative internist than the three mentioned above (Radó 2005). In this he resembled other Greats, such as *Ernő Jendrassik, Imre Fodor* (Radó 2011a), and *Imre Magyar*, who only conducted animal experiments by way of exception, on select issues. Pál Gömöri did not have a hard time convincing his contemporaries of his truth: he carried out the animal testing-based elaboration of the ideas he had acquired beside the hospital bed within the framework of an exceptionally broad scientific team (Gomori, Romhanyi, Foldi and Szabo 1954; Gomori, Munkacsi, Nagy et al. 1962; Gomori, Glaz, Suhanyeczky and Csapo 1960; Endes, Takacs-Nagy, Rubanyi and Gomori 1955; Gomori, Kovach, Takacs, et al. 1960; Gomori, Harsing, Kallay et al. 1969; Gomori, Takacs and Kallay 1960; Gomori and Takacs 1960).

It is therefore hardly surprising that Pál Gömöri achieved everything there was to achieve for an internist in Hungary. To name but a few of his positions and distinctions: Department Head of the Clinic for Internal Medicine no. 2 of the Semmelweis University of Medicine; Director of the National Institute of Internal Medicine; Chairman of the Hungarian Medical Societies and Associations; Full Member of the Hungarian Academy of Sciences and Chairman of its Medical Sciences Section; Member of the Academy of Sciences of the Soviet Union; Kossuth Prize laureate. Quite unlike Sándor Korányi, who had also achieved everything but was sent to

retirement dishonorably in a bad era, with his clinic dissolved and his school disbanded (Radó 2005). As for Pál Gömöri, he stayed at the top in different bad eras. Perhaps he was born under a lucky star; his personal charisma and popularity might have also made a difference – as likely did his self-sacrifice. The latter is confirmed by my research of online sources.

Relative to Hungarian medical scientists of a similar stature, of the 255 (248, according to others) works of Pál Gömöri relatively few appeared in foreign publications. Of the 70 works available online, published between 1950 and 1973, most appeared in foreign languages (chiefly in English in journals produced by the [communist] Hungarian State). Of the 24 publications between 1950 and 1956 only nine were published in a foreign language but all of these saw the light of day in *Hungarian (or GDR-based) journals.* In the so-called Rákosi era, even a scientist as renowned as Pál Gömöri could not risk publishing, as he had been wont, his scientific results in a Western journal (as well). After 1956, we again see his works appear in reputable journals, including in *The Lancet* (Gomori, Glaz, Suhanyeczky and Csapo 1960; Gomori, Takacs and Kallay 1962; Gomori and Takacs 1960).

Pál Gömöri was not only my teacher but also chaired my final examination. In the wee hours of the examination day, I wanted to go through the acid-base balance once again. Alas, I fell asleep reading and entered the classroom 45 minutes late; two of my classmates had already finished the examination. Professor Gömöri posed quite challenging questions (typhus exanthematicus, rheumatoid arthritis and lead poisoning) but gave me the top mark.

I was a fan of his classroom lectures. He was a captivating, brilliant, logical lecturer. He presented his subject with such confidence that his knowledge seeped into us. He barely had a voice, however; we could hardly hear him even when he was speaking into a microphone, hoarsely but enthusiastically.

In 1953-54, my classmate and friend, *Pál Dévényi* (he resides in Canada, was formerly a family doctor and thereafter an alcohologist), spent a whole year at Gömöri's clinic as a medical student, just as I did at the Rókus Hospital (Radó 2011b). He invited me to the clinic a number of times; I partook in the Professor's grand rounds and scientific report sessions. I was impressed by Gömöri's style of doing rounds. He barely spent time on patients with known diseases, who were unproblematic and in a stable condition. He did, however, sit down at the "problem cases"; his doctors, such as Assistant Professor (later, Professor) Sándor Gerő, Teaching Assistant Szigeti and others, huddled around him and at times a fiery scientific debate erupted. Later, while serving as a

Chief Medic and Department Head, I made great use of the style of doing rounds with which I had familiarized myself at Gömöri's clinic. Gömöri's superiority was conspicuous during the report sessions. Whenever a question was undecided, he instructed one of his subordinates during the session: "Go and make a phone call – but right now!" He was not one to tolerate procrastination.

One could run into Gömöri at downtown nightlife spots as well. His scientific productivity, career path, as well as the professional, public and social success – and his *lifestyle* – had become an example to be followed for the late *László Riesz* (also a friend and a classmate of mine) and for myself. In contemporary terms, one could perhaps say that this was a "model career trajectory." We were intent on mimicking Gömöri. (In the end, László Riesz became a family doctor and I have held positions of Chief Medic Department Head and University Lecturer; neither of us has become a head of department at a university).

Gömöri's favorite fields of interests were salt and water balance, kidney function, and hypertension. In his books published in 1953 and 1966, too, he dealt with kidney conditions and hypertension. His scientific results were on a par with international standards. Even *Homer Smith,* the eternal "Kidney Pope" made references to his works. Homer Smith's "Kidney Bible" – titled *The Kidney* – was published in 1951, and in the "Renal function in Addison's disease" chapter the author noted that it was Gömöri (along with his colleague, *Margitay Becht*) who had first described GFR decrease in Addison's disease (Margitai-Becht and Gömöri 1938).

Homer Smith chose the spectacular *juxtaglomerular apparatus,* colored using histological methods, as the cover of his book. This, too, underlines the brilliance of the author: already in his time, Smith held up the significance of this apparatus – also of dominant importance in our current view of hypertension research – vis-à-vis any other histological field (formula) characteristic of the kidney. Gömöri had advocated for the introduction of isotope renography to advance the diagnostics of renovascular hypertension (Gráf 1973; Nagy 1983) but later became disillusioned with the method. It was not specific and sensitive enough, there were all too many false positives and negatives. Initially, the present author had also applied this method to hypertension research but later, as a by-product of sorts, described "furosemide (diuretic) renography," suitable for the diagnosis of ureteral obstruction (Rado, Banos and Tako 1967). Our first such treatise was published in *The Lancet,* in 1967, followed by nine publications on the same topic. Finally, 36 years after the first article, we again provided an overview of the significance of this method (Radó 2001a,b). Gömöri lived to see the birth of diuretic renography in 1967, to see that – upon the

obstruction of the ureter, and in response to furosemid – a characteristic, so called "obstruction curve," emerges. However, he was not there to witness more recent developments (1984, see also the addendum), namely, that a very similar change in renovascular hypertension is prone to develop also as a response to *captropil* (Oei, Geyskes, Dorhout and Puijlaert1984). In Hungary, *Sallai* and *Fornet* introduced "captropil renography" in 1986 (Sallai, Fornet, Nánay et al 1986) . (*Mihály Horváth*, the pioneering scholar of Hungarian nuclear medicine, has emphasized just how soon after the method's initial development [Horváth 1995]). *Gömöri would doubtlessly have been most delighted to learn that isotope renography, after all, has become significant in the differential diagnosis of hypertension.* (By now, to be sure, the *even more efficient* methods have relegated to the background the use of this technique as well.)

Gömöri's scientific results are preserved in international medical journals, libraries, and on the Internet. The spirit of his medical teachings, however, must be passed on by his students and disciples, so as to postpone the fading his memory to the farthest possible future.

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Addendum

The obstruction curves observable in the course of isotope renography may vary. Significant interindividual differences are possible. As a result, the renogram deformed in response to capotropil in renovascular hypertension may show similarities to the differences caused by furosemide, observable in renal curves in ureteral obstruction (O'Reilly 1989). Furosemide renography was developed in 1967 (Radó, Banos and Tako 1967), while captropil renography in 1984 (Oei, Geyskes, Dorhout et al. 1984)*;* that is to say, the "obstruction curves" described and presented by us predated captropil renogram by 17 years in scientific literature. We wish to underscore this since the issue bears a personal pertinence to the history of medicine. For it is my assumption that furosemide curves might have facilitated the development of captropil renography through a personal connection.

I spent 1976 and 1977 in the Netherlands, at the University of Utrecht's Clinic for Internal Medicine, as a Visiting Scientist at the Hypertension and Nephrology Department, supported by the *Nierstichting* (an organization roughly equivalent to the Hungarian Kidney Foundation). During these two years, material for 18 of my publications was developed in cooperation with *dr. Evert J. Dorhout-Mees,* Head of the Hypertension and Nephrology Department. His deputy, *G. G. Geyskes,* and *dr. H. Y. Oei* of the Department of Nuclear Medicine were the first to describe captropil renography in 1984. I developed a close personal connection to dr. Oei. Dr. Oei and his wife who would invite me and my first wife to their home and would also visit us on occasion. I gifted an offprint of my publications to dr. Oei; we have discussed my works at quite some length and they might have facilitated the emergence of captropil renography as an idea.

To be sure, far be it from me to vindicate an unrightful role for myself in the development of captropil renography (which occurred seven years after my departure from the Netherlands!). Nevertheless, it cannot be excluded that the professional discussions during the hours spent together, along with the indeed spectacular curves of furosemide renography, provided a source of inspiration for dr. Oei. *That said, the credit of developing captropil renography obviously goes to him and dr. G. G. Geykes.*

The latter section is pertinent to this piece of commemorative history of medicine since I was fascinated by Gömöri's eagerness to research renovascular hypertension and his initial optimism with regard to isotope renography. It is highly likely that Gömöri's aura played a role in me developing furosemide renography. I have no way of knowing whether my works had indeed exerted an influence on dr. Oei but if so, then Gömöri's spirit had a bit to do with that as well.

Another remark

I was already in the process of writing this publication when I had a chance to talk freely with medical interns from a Budapest hospital's department of internal medicine. They had never heard of Gömöri. A teaching assistant from a clinic of internal medicine – incidentally, from the very same one where Gömöri used to lecture as a professor – who happened to be present was unsure whether he had heard of Gömöri.

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