

Neuropathology, my friend

– on the paths of being and non-being

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Introduction

Let me start off my recollections by saying that it had never occurred to me that I would ever become a doctor. I was interested in the arts and humanities, history, literature. When I was in high school, back in the early fifties, I participated in a literature competition and wrote a piece called *Conversation with the Moon*.

It was about our escape from Bratislava (Preßburg, Pozsony). We fled at night by boat on one of the river branches of the Danube in August 1945, in the last year of World War II. I was eight years old. Our possessions in bundles on a cart, our destination was a small Hungarian town called Mosonmagyaróvár.

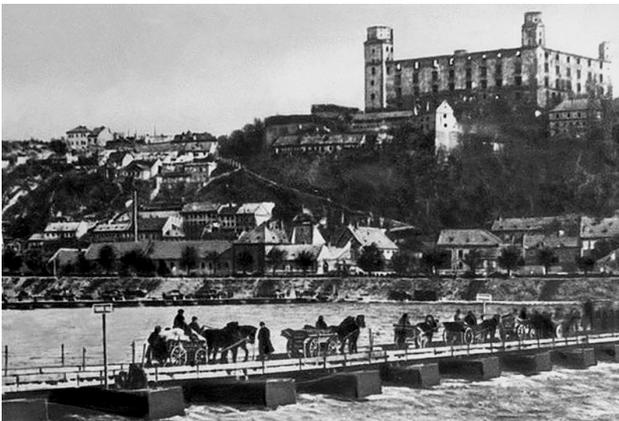


Fig. 1. Bratislava, 1945 source: TASR archive

In my mentioned text *Conversation with the Moon* I embedded all my youthful, naive thoughts and emotions from that time. This was in Hungary in the early fifties under the Rákosi dictatorship. After finishing that story I realized it couldn't go on like this for long. There was a feeling of looming threat that made my stomach hurt. And now I just had to decide what profession to choose for further learning.

Both my mother and grandfather were physicians and it became obvious that I, too, would choose this apolitical, strictly fact-based profession, although it felt quite distant for me.

Flight

My paternal grandfather, Gyula Garzuly, was a ship's captain, he also sailed around the World.

Later in Bratislava (Preßburg, Pozsony), when it was still a Hungarian city, he became the supervisor of the vessels of the *Hungarian River and Shipping Company*. In 1916 he received a major award, the *Silver Degree of the Civil Military Cross of Merit* – ships on the Danube also took part in the events of the First World War. With this, he earned to be imprisoned in Ilava in 1918. He died shortly after his release, I didn't even know him.

My other grandfather, Dr. Rezső Limbacher, the son of a blacksmith in an earldom, was such a skillful blacksmith „assistant” that the count taught him. Graduated from University, he became a recognized obstetrician-gynecologist in Bratislava (Preßburg, Pozsony). The first postmortem sectio cesarea in the city was performed by him, an article about this case appeared in the *Hungarian Medical Weekly*. His son, Rezső Peéry, as a journalist and writer, was one of those who held the soul with his articles in the *Hungarians of Bratislava* after the Treaty of Trianon.

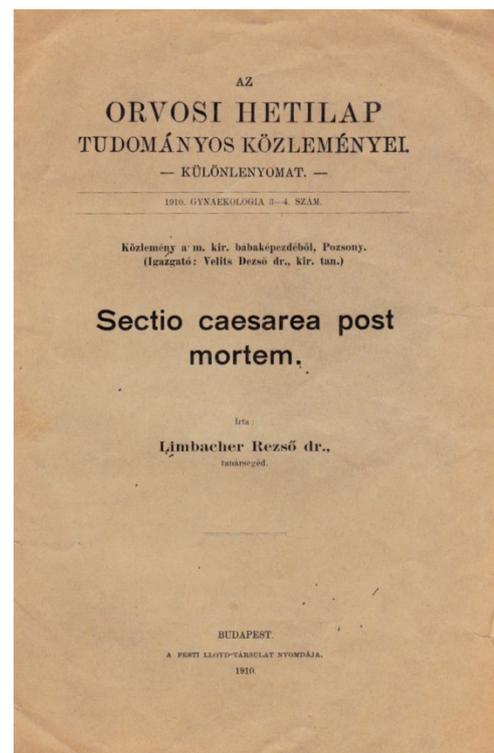


Fig. 2. My grandfather's publication in the *Hungarian Medical Weekly*, 1910

After the World War II we had to flee from Bratislava. Every Hungarian escaped who could. The future prime minister, Edvard Beneš, will an-

nounce it shortly: *Our people cannot live in a common country with the Germans and the Hungarians.*

Dictatorship and University

I was admitted to the Medical University of Pécs. At that time there were several internationally known professors at the University. One of these was János Szentágothai, the professor of anatomy, whose lectures resembled a grand performance. Learning between his posters and drawings of anatomical figures was most interesting and exciting. Another professor engraved himself in the hearts of the students with his directness, warm demeanor and his special approach to facts and events. That was György Romhányi, the professor of pathology. The sentence *Pathology is the science of human suffering* (1) would remain in the memories of his students for a lifetime.



Fig. 3. Professor Dr. István Környey (1901-1988)

During my studies I was most impressed by neurology and psychiatry – at the time these two specializations were not separated yet. Professor

István Környey was the head of the University Clinic in Pécs, a well-known and prestigious scientist abroad. Neurologist, psychiatrist, neurosurgeon and neuropathologist in one person, a wiry, strict and consistent man. He kept a kind of Prussian discipline in the clinic and would not even be broken by the Rákosi system.

I decided to become a neurologist and psychiatrist myself. The field of psychiatry was a bit of an exit or detachment from the classical medical professions, although I could only get to know Freud's books under my blanket at that time. Neurology, meanwhile, involved the precise mapping and careful evaluation of the patient complaints. Particularly the physical examinations were much more complex, such as utilizing tools from internal medicine, palpation, percussion, auscultation and blood pressure measurements. I was ready to take that challenge.

After graduation I was eligible to apply for three positions. It was evident that I could not stay at the University in Pécs, considering that I did not actively participate in the KISZ, the Communist Youth Association. Others were much smarter, they knew what needed to be done to stay in Pécs and to become future professors. They weren't really friends of mine.

I applied for positions of neurology and psychiatry in rural regions. Since I did not have any patronage from the comrade secretariat of the University, I was not given the opportunity to do so. I had to choose from pathological positions, because there were usually fewer applicants for these and the vacancies had to be filled with people like me. It was intended as a punishment. This was in 1962 in the times after the failed revolution, not yet in the period of the soft Goulash Communism, but still in the hard dictatorship of the early sixties – there was no place for complaints.

I felt that pathology was the medical field which was farthest from my interests and abilities. I remember my first autopsy practice at the University – when we entered the autopsy room and I saw a female corpse opened up with the wide layer of fat and intestines, I had to hold on to the wall so that I wouldn't faint. Still, I had no choice but to take on the appointed task.



Fig. 4. The Hospital of County Vas and Szombathely, 1929

The mirror of sufferings

I ended up at the hospital of Szombathely, now called Markusovszky Teaching Hospital of the University of Pécs. The current building complex was built in 1929, and at that time it was the largest hospital in the western part of Hungary. After the Treaty of Trianon, which had tragic consequences for Hungary, the University of Pozsony (today Bratislava) was forced to move 1919 to Hungary. Szombathely was the only other city after Pécs which was considered suitable for the new place of the University (1923).

I started working in the Pathology Department in 1962. Slowly I became accustomed to the silent dead and I started to warm up to the colorful histological preparates. I discovered the world that is our internal architecture and the macro-and microscopic war our bodies wage against our ferocious enemies – which, of course, have the same right to live just as we do. Yes, it is true what Professor Romhányi said: *Pathology is the science of human sufferings* and what I see during autopsy is *the*

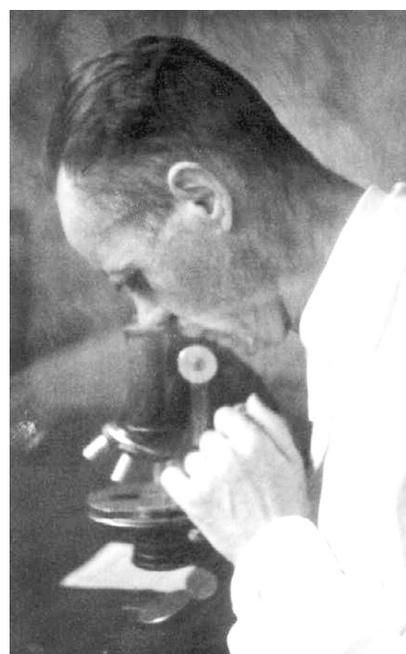


Fig. 5. Professor Dr. György Romhányi (1905-1991)

mirror of sufferings. Today I stand at the same autopsy table where Romhányi had also worked four years after the war. Yes, pathology needs to be

approached this way, I understand now. And I began to see the value of analysing medical treatments through the autopsies and also its worth for helping patients in the future.

Despite these insights, I still wanted to be a neurologist and psychiatrist in the future. I even told this to the chief physician of pathology and he acknowledged my wishes in good faith. I still would have to wait two more years for this opportunity. Looking back I am very grateful for this twist of fate and also to the party-member-packed secretariat of the University which had exiled me to Szombathely, where I got to know pathology's world, methods and a point of view.

Black Water, Swirling Time

Right at the start of my work at the Department of Pathology I discovered an old tied-up bundle of autopsy records on the shelves. The oldest ones could be dated back to 1920 and were still handwritten. From 1920 to 1929 autopsies were performed by the chief physician of the Department of Internal Medicine and his doctors. The current complex of hospital buildings was built in 1929 and pathologists have been only working here ever since.

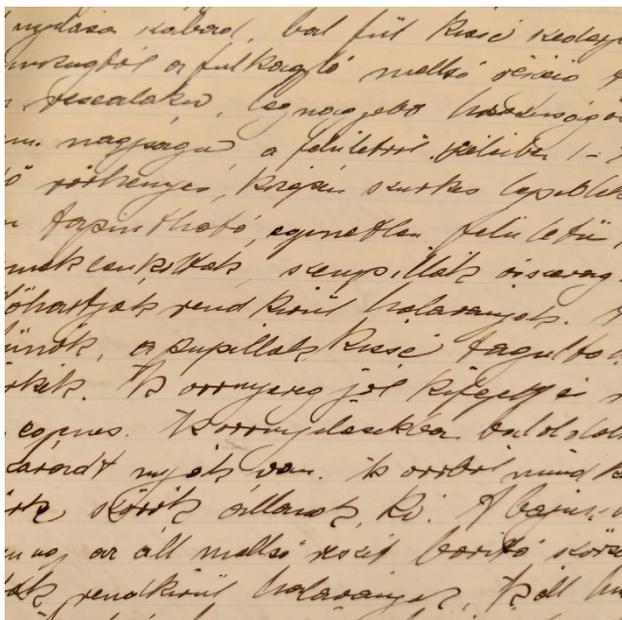


Fig. 6. A page of an autopsy report, 1923

The reports were interesting and instructive but also informative regarding the history of the Pathology Department itself and its doctors. Many years later, in 2006 I looked back to examine this period. I reviewed the protocols from 1920 to 1956, written before and after World War II till the Hungarian Revolution in 1956. They added up to a total of 6000 records. I wrote about it in a book with the title *Black Water, Swirling Time – The Message of Autopsy Reports (1920-56)*.

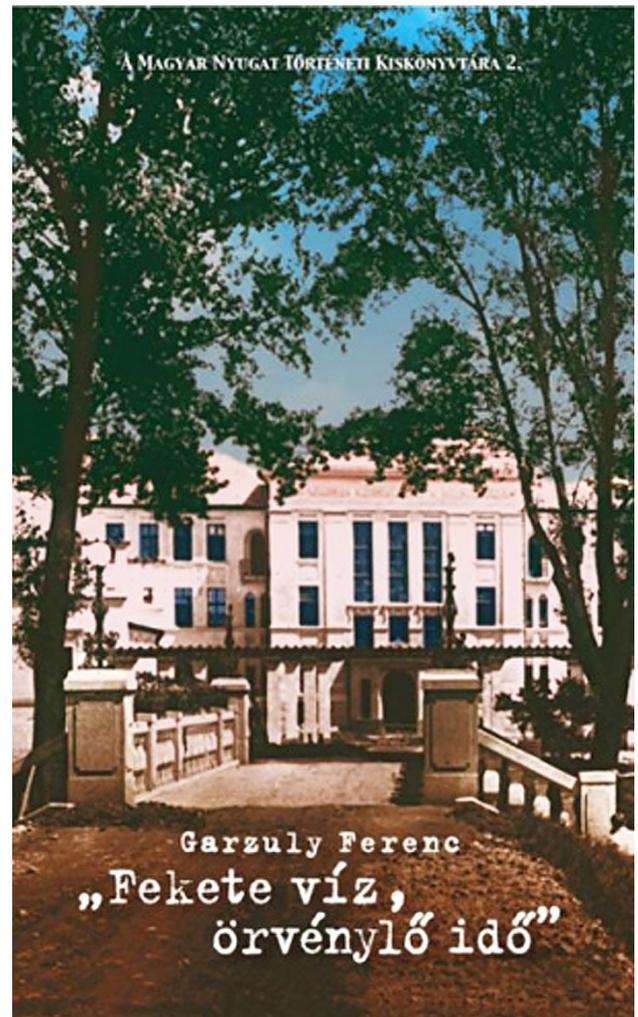


Fig. 7. *Black Water, Swirling Time – The Message of Autopsy Reports (1920-1956)*

During this period a lot of radical changes occurred. Interestingly, sifting through the autopsy reports revealed that in the pre-war years every third death protocol was reported on tuberculosis. After the war the rate of infant mortality outstripped these deaths. The reports also included cases of diseases which have since been eradicated

such as syphilis, tetanus, scarlet fever, whooping cough, diphtheria or poliomyelitis. They recount the typhus epidemic in the department of psychiatry and the epidemic of hepatitis in a child asylum. Heart attacks or lymphoma barely occurred. Curiously, patients under the age of 60 died three times as often in the hospital than those over the age of 60.

In the meantime, political conditions changed drastically. To illustrate this in my book I have attached excerpts from the local newspaper *Vasvármegye*. In 1940 for example, the chief physician of pathology, Dénes Görög, could have read news predicting a glorious future: *The desertion of England has begun. The English population is in distress about a possible German landing... Life in London is paralysed. The prices for a seat on one of the big ocean liners are horrendous... England will either surrender or be destroyed.*

After the war in 1948 chief physician Romhányi might have been reading the local newspaper and be persuaded that the Communist Party had taken over the role of God in Hungary: *Thank you for my recovery. I am a country woman with five acres. Due to my lung problems I was lying in the pulmonology of the public hospital in Szombathely. I was operated twice. I owe my recovery to the Party and the doctors of the hospital.*

The events of the time shaped the human destinies severely. Dénes Görög was taken to Auschwitz with his family in 1944. Under Mengele's supervision he performed autopsies with another Hungarian doctor, Miklós Nyiszli. Shortly before his death he said: *Miklós, with your willpower I am confident that you will make it home. I feel that I won't survive. My wife and daughter died here in the gas chamber, I have proof that it happened. I hid a little boy with the monks of the monastery in Kőszeg. This is my little son Sándor, 12 years old. Take him with you when you get home. I know for sure that I will die. This is my last wish.*

This wish was fulfilled and the little boy survived, became a chemist, a pharmaceutical researcher and a member of the Hungarian Academy of Sciences.

After his years in Szombathely in 1951 György Romhányi was appointed the head of the Patholog-

ical Institute of the University Pécs. His experiences at the hospital in Szombathely might have led him to formulate the sentence: *The dead teach us*. He may have also thought of the fate of Dénes Görög.

Neuropathology laboratory – without a boss



Fig. 8. Department of Psychiatry and Neurology, Szombathely and its physicians, 1965

During the two years I spent in pathology I performed the autopsy of those who died in the care of the Department of Psychiatry and Neurology. I also studied the histological specimens and learned about their diseases. In 1963 this department was divided into two departments, one of them was headed by a new physician Dr. László Baltavári, from the Környey-Clinic in Pécs. His wife worked in the laboratory of that Clinic. The new chief physician managed to set up a neuropathology laboratory in the department within a year. At that time there was a vacant medical position in the department, which meant that I was now able to have a transition. Since I already had a pathological *past*, so in addition to my daily medical work on patients, I also received the neuropathology laboratory as a *gift*. Without a boss. *I had to stand on my own two feet*. I was already able to do the sections

of the brains here and through it we were able to evaluate our medical work. I am still doing this work, although the laboratory (with me) has been relocated to the Pathology Department nearly twenty years ago. The number of brain cuts performed here is close to 6000.

As chief physician of the Department of Neurology

The departments were transformed into neurology (with 70 beds) and psychiatry (with 250 beds) in the 1980s. I stayed with the former. After twenty years Dr. László Baltavári died and for the next twenty years I became the head of the Department. Still, I couldn't leave laboratory work for a minute, I would not give it up.

The neuropathology laboratory strongly supported the medical care for patients. At that time there was no CT or MRI. Only the neuropathology gave us insights into the changes caused by the diseases which was teaching us many lessons even after the death of the patients. It also gave us histological diagnoses which radiological examinations still cannot provide today. Because of my medical work both in our and in other departments of the hospital (for example pediatrics, infectiology, intensive care) I often encountered rare diseases. Many of them were fatal and difficult to diagnose. I have increasingly used the capabilities of our laboratory to solve these mysterious cases. This was made possible by a number of contacts which I had established through the years, mainly with the Institute of Neurology (Neurologisches Institut) in Vienna.

Deus ex machina

I have to look back to 1966 when something extraordinary happened. By this time I was already working in the 2nd Department of Neurology and Psychiatry. I received an invitation from Professor Franz Seitelberger, head of the famous *Institute of Neurology* in Vienna, for a three-month scholarship-funded study trip. Beyond the *Iron Curtain*, to the *land of the capitalist*. I was absolutely surprised and only got to know later what happened.

The first woman to graduate from the *Technical University* of Vienna was my father's sister,

Margarethe Garzuly. She was admitted in 1919 after World War I and graduated in 1923. She moved from Bratislava to Vienna, became a staff member of the University, habilitated and in the meantime her husband became the head of the department of *organic chemistry*. When my aunt found out that I was working in neuropathology she called Professor Seitelberger. It was unbelievable. And it was even more incredible that I received a passport for the trip and could leave the country. At a time when hardly anyone could travel to the West. To this day I still wonder how it could have happened. Maybe the Party knew (as they knew everything) that I would always come back to my very good friend, a young, nice and very talented ceramic artist, Maria Geszler.



Fig. 9. Maria Geszler, a young and talented ceramic artist and a Prince with big nose

Under the wings of Pécs and Budapest

Dr. László Baltavári advised me not to go to Professor Seitelberger completely untrained. I should study in Pécs for a month under Professor Környey before I would leave for Vienna. Shortly afterwards I found myself at the Clinic in Pécs.

In the mornings Professor Környey was always sitting in a gigantic room behind a very wide baroque desk and about 20 doctors would be standing in front of him. If the floor creaked under

one of them he looked up to see, who was that undisciplined one who couldn't stand still just for half an hour? There were three female assistants working in the laboratory and a young doctor, who vanished shortly after. Every day I received histological preparates for study from Professor Környey accompanied by offprints, e. g. about tick-borne encephalitis.

In the meantime (or later?) I became acquainted with Ferenc Gallyas, who was a young chemist. He began to investigate silver impregnations for glial cells at that time. Later, this made him world-famous. On such specimens discovered Mátyás Papp the so called „Papp-Lantos bodies”. We became friends although I was very surprised that his lunch always consisted of three eggs. From a culinary point of view the everyday life at the Clinic was interesting as well, for example lunch time you could choose between soup or bread.

From Professor Környey I received Spielmeier's book on neuropathology which included many coloured hand drawn illustrations and I used it to prepare for the journey ahead. In later years Környey became my supporter and our relationship deepened especially after he retired and moved to Budapest. There he lived in one of the apartments in the park of the *National Institute of Psychiatry and Neurology* (built in 1868 for mentally ill patients) courtesy of the director Professor István Tariska who was also an excellent neuropathologist.

The neuropathology laboratory at the *National Institute of Psychiatry and Neurology* in use here was the leading laboratory in the country. One great advantage of the laboratory was that the well-trained neuropathologist Katalin Majtényi worked here full-time. I have been there many times with Majtényi, Tariska and Környey to consult histological specimens. Környey wrote his book on *Neuropathology* here. To illustrate the chapter about the *Hallervorden-Spatz disease* he asked me for some photos. After I handed these to him, he told me that once in Berlin Hallervorden and Spatz faced him on the sidewalk. Hallervorden raised his hat and said, *Guten Tag* while Spatz greeted him with a *Heil-Hitler*. After that I always thought about Hallervorden as a decent person but later I was very disappointed when I found out about the cir-

cumstances of developing the *Hallervorden collection*. In Nazi Germany, a large number of mentally disabled were killed. The majority of pediatric brains were transferred to the *Kaiser Wilhelm Institut für Hirnforschung*, led by Hugo Spatz, and was included in the *Hallervorden collection*.

I also often met Lóránt Leel-Össy here who headed the Neurology Department in Esztergom but he also had a laboratory in Miskolc. He became the first president of the Hungarian Society of Neuropathology.

Then the years passed, many things changed in the castle-like building, until in 2007 the huge building closed its gates. It is still empty and only owls are hooting in it, missing angry psychiatric patients and clever neuropathologists.



Fig. 10. The ruins of the National Institute of Psychiatry and Neurology, 2017 source: hu.wikipedia.org

A young man slips through the *Iron Curtain* – The *Neurologisches Institut*

At Hegyeshalom, on the Hungarian-Austrian border, I transferred to a train departing for Vienna. It carried two wagons, surrounded by four border guards armed with machine guns.

I successfully arrived in Vienna. I have already mentioned my father's elder sister, who had two more siblings – both sisters – who fled from Bratislava to Vienna after the war. They supported me during my stay here.

The *Neurological Institute* – on the *Schwarzspanier Street* – was at the first floor of a huge building. I learned later that Sigmund Freud, whose writings on decoding of dreams were my favorite readings in those times, had lived on a sloping part of this street not so very long ago.

I have found Professor Seitelberger in his room. He was very friendly with me, he talked a bit to me, and then I got a table in the large lecture hall in front of the benches. I saw him again and again most of the time as he presented the Institute to his foreign acquaintances. They also looked into the lecture hall. I greeted everyone politely.

There was a constant typewriter-knocking coming from the room next to the lecture hall. Kurt Jellinger worked here diligently. From the intensity of the knocks, one would think that the number of his publications will at least approach a thousand, if not more. I was very grateful to him, because he took me under his wings immediately: he provided me with tasks and instructions, and I received a case from him for analysis – syringomyelia combined with spinal haemangioblastoma.

It was interesting, I was looking for similar disease combinations in the literature, in old and new books and journals in the large library, which always rang from emptiness like a cathedral. Unfortunately, I always had to be afraid that someone would lock the iron door of the library from outside and I would have to say goodbye to my young life here, and so I can never see the nice and talented ceramic artist again.

I gave a presentation later on the edifications from the analyses at the end of the study tour. Since then, I feel bad to have left this area for the sake of rare diseases. But the latter was required by the daily practice. Slideshows were not known at that time, so I had to draw my illustrations: the drawings and the related notes could be projected on a stretched canvas with a huge episcope.

After the presentation, Professor Seitelberger invited me to a nearby restaurant for a farewell lunch and I also got a ticket from him to Pablo Casals' performance at the Musikverein.

I last saw Professor Seitelberger many, many years later, in 1992, in Szombathely. I invited him

to give a lecture in our hospital library. He chose an interesting title for his performance, I was amazed: *The neurobiology of aging – brain aging and cognition*. I think he felt that this was a dangerous area for everyone.

Steps towards rare diseases

My trip to Vienna was the first initial step, on which further contacts, personal ties and consultations with the Institute and its doctors were built. I visited the Institute on several occasions for a longer or shorter period of time later, although it was initially difficult due to the *Iron Curtain*. But the evaluation, consultation of cases was – however – solvable by sending paraffin blocks too.

I visited Professor Kurt Jellinger and later his successor, Professor Herbert Budka, and his doctors, first of all Ellen Gelpi, Romana Höftberger and later Gábor G. Kovács with special and rare cases: these meetings also resulted in publications (2-17).

Neuropathological diagnosis of diseases was a difficult task, especially for the deceased ones at the Pediatric Department. There has been almost no information or descriptions about the neuropathological abnormalities caused by these diseases, so it was worth dealing with them. We were able to diagnose some of these clinically – just like the family with the Lowe-Syndrome (2) – but e. g. the disease underlying symmetrical cerebral heterotopias and strange knee calcifications – the Zellweger-Syndrome (3) – was recognized by Kurt Jellinger. Adult cases were also usually limited to rare diseases such as the Foix-Alajouanine disease (4), or the Jakob-Creutzfeldt disease (5).

Efforts to diagnose an undiagnosable disease

Of the many rare and interesting cases I have encountered, I would like to highlight only two. In the first, the story began when one of our female hospital assistants became disoriented for half an hour, later not remembering it. We found strange calcification along the Sylvian-fissures on the CT scans. The total protein content of the CSF was extremely high. The cause of the global transient amnesia was not found.



Fig. 11. Congress of Neuropathology in Kyoto, 1990. On the left foto: Franz Seitelberger, his wife and Hans Lassmann left, right one of my friends, Herbert Budka. On the right foto: Riki Okeda (Tokyo Medical and Dental University), my other friend and I

Later, it occurred to me that I had seen a similar CT scan from a female patient with suspected multiple sclerosis three years earlier. We have found this recording and it turned out, that this patient also had a very high CSF total protein. And we discovered – quite by accident – that these two patients were related to each other, cousins. We mapped the whole family. Many years ago, two men from this family passed away at our department: before that, they visited the department many times because of their central nervous system symptoms (migraine like headache, transient global amnesia, nystagmus, spastic paresis, ataxia, hearing loss, incipient dementia).

We found the paraffin blocks of the deceased (but only blocks made from the brain). Examination of the histological specimens revealed that amyloid was deposited in the central nervous system, primarily subpial. The area next to the deposited amy-

loid was calcified. It became apparent that these calcifications could be seen on the CT scans.

None of the patients had any peripheral nervous system symptoms. However, neither the symptoms, nor the high protein content of the CSF was consistent with any of the known central nervous system amyloidoses.

And then, one of the two mentioned female patients passed away. After talking to the family, the deceased was brought to the hospital by ambulance and an autopsy was made. It turned out that although the patient had no symptoms of involvement according to the other organs – apart from central nervous system abnormalities – amyloid was found in small amounts in the kidneys, heart, and liver. So the autopsy referred to systemic amyloidosis. But our cases could not be classified here either. Our cases were very similar to the very rare,

so-called oculoleptomeningeal amyloidosis cases, but the patients had no visual impairment.

Consultations again and again (Neurological Institute, University of Vienna, Max-Planck-Institut für Biochemie, Martinsried, Departments of Pathology and Neurology, New York University Medical Center), immunohistochemical and molecular biological studies revealed a completely unexpected result: the disease was caused by a transthyretin mutation.

We summarized findings in our article (authored by *Vidal R, Garzuly F, Budka H, Lalowski M, Linke RP, Brittig F, Frangione B, Wisniewski T*) in the *American Journal of Pathology* in 1996 as follows: *We describe a novel transthyretin mutation at codon 18 where Asp is replaced by Gly (D18G) in a Hungarian kindred. This mutation is associated with meningocerebrovascular amyloidosis. Fifty different transthyretin mutations are related to amyloid deposition, typically producing a peripheral neuropathy or cardiac dysfunction... With this report we establish that transthyretin amyloid deposition can also produce central nervous system dysfunction as the major clinical symptom (7).*

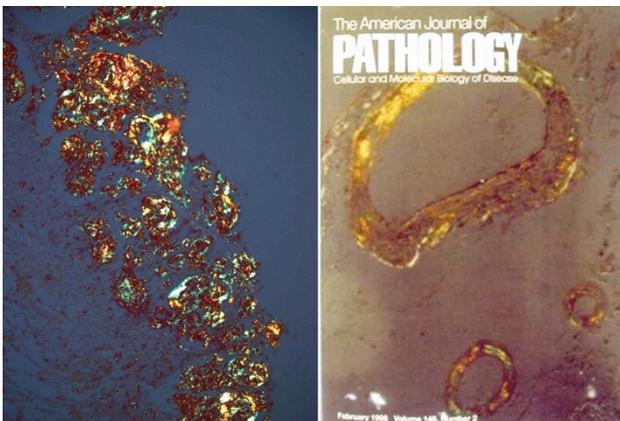


Fig. 12. Amyloid showing birefringence and the cover of *Am J Pathol* with an image from our case

In the Journal *Neurology*, the patient's clinical symptoms were summarized, naming the disease *Hungarian type amyloidosis* (8). In this form of familiar amyloidosis, the pathological mutant is produced in large amount in the plexus choroideus and – upon entry into the CSF – immediately precipitates on the membranes, ependymes, unlike to forms that cause peripheral neuropathy, where mutants remain in the blood (9).

Now we know that the so-called oculoleptomeningeal amyloidoses are also caused by transthyretin mutations. Unfortunately, these "cerebral" forms of amyloidoses are not yet curable, although our Neurology Department has just admitted the next sick member of our family.

Establishment of the *Hungarian Society of Clinical Neurogenetics, Szombathely, 1997*

Five years of efforts made clear to me, that underneath the layer of neuropathology stretches another layer, clinging to it: the neurogenetics of diseases. Without any knowledge of this area, we cannot treat the hereditary diseases. Without any molecular-biological tests, we can do essentially nothing for diagnosing or researching them, and the key to curing these diseases is also buried here.

The recognition that neurogenetics will have a significant development and that the work in Hungary should be coordinated, was also evident to other neurologists and neuropathologists. As a result of the joint efforts, we held the first scientific meeting on neurogenetics in Hungary: with a significant number of foreign participants, it took place in Szombathely on May 9–10, 1997. Among the foreign professors of the gathering were George Karpati, Kurt Jellinger, Herbert Budka, Parviz Mehraein, Hans (Hano) Bernheimer, Jean Bénard, Manuel B. Graeber. The event had a lot of Hungarian participants. Professors Ferenc Mechler and Mária Judit Molnár from the Clinic of Neurology in Debrecen also participated at the meeting. They suggested the establishment of the *Hungarian Society of Clinical Neurogenetics*.

To this day, the Society diligently holds annual scientific meetings and looks to a prosperous future. At the tenth anniversary gathering of the Society, Professor Ferenc Mechler and I had the honor to become life members of the association. However, it took more than twenty years to wait for an excellent neurologist and researcher, Professor Bernadette Kálmán – who has spent several decades in the United States – to establish a molecular pathology laboratory at the Markusovszky Hospital.



Fig. 13. A group of participants of the first scientific meeting on neurogenetics in Hungary. Standing row from right: Gábor Kiss, Jean Bénard and wife, Parviz Mehraein and wife, Maria Geszler, Sámuel Komoly, in front of them Manuel B. Graeber and I, George Karpati and wife and Miklós Wenczl are sitting.

Autopsy at night

The other interesting disease was a variant of the autosomal dominantly inherited Fabry disease. A patient – who suddenly became unconscious – was brought to our Department in the evening. Angiography was performed, the images showed an extremely wide basilar artery – a so called megadolichobasilar artery – which was thrombosed. The next morning, during the visit, I lifted the patient's quilt. And then I saw on the skin of the abdomen the characteristic angiokeratomas of Fabry disease. I recognized it immediately, because three years ago I saw a similar patient. It was later revealed that the patient seen three years ago was the same.

The patient was expected to die within a few days. I called Maria Mázló, the head of the Electron Microscope Laboratory, of the *National Institute of*

Psychiatry and Neurology in Budapest. She said, the investigation would be carried out, but asked us to send fresh samples to the laboratory. I discussed the immediate autopsy with the head physician of our Pathological Department. The patient died at one o'clock at night. After the obligatory two-hour wait we were standing in the autopsy room, and the autopsy was done at three o'clock. This was the first autopsy in Hungary by a patient who died of Fabry disease, no previous reports were found. And we believe it was also the first autopsy at night in our country.

Three years later, a similar case occurred in a neighboring town's hospital: a thrombotized giant basilar artery caused death. We received the formalin-fixed material samples. The lesions were completely similar to our case. And within a short time it turned out that the two patients were related to each other.

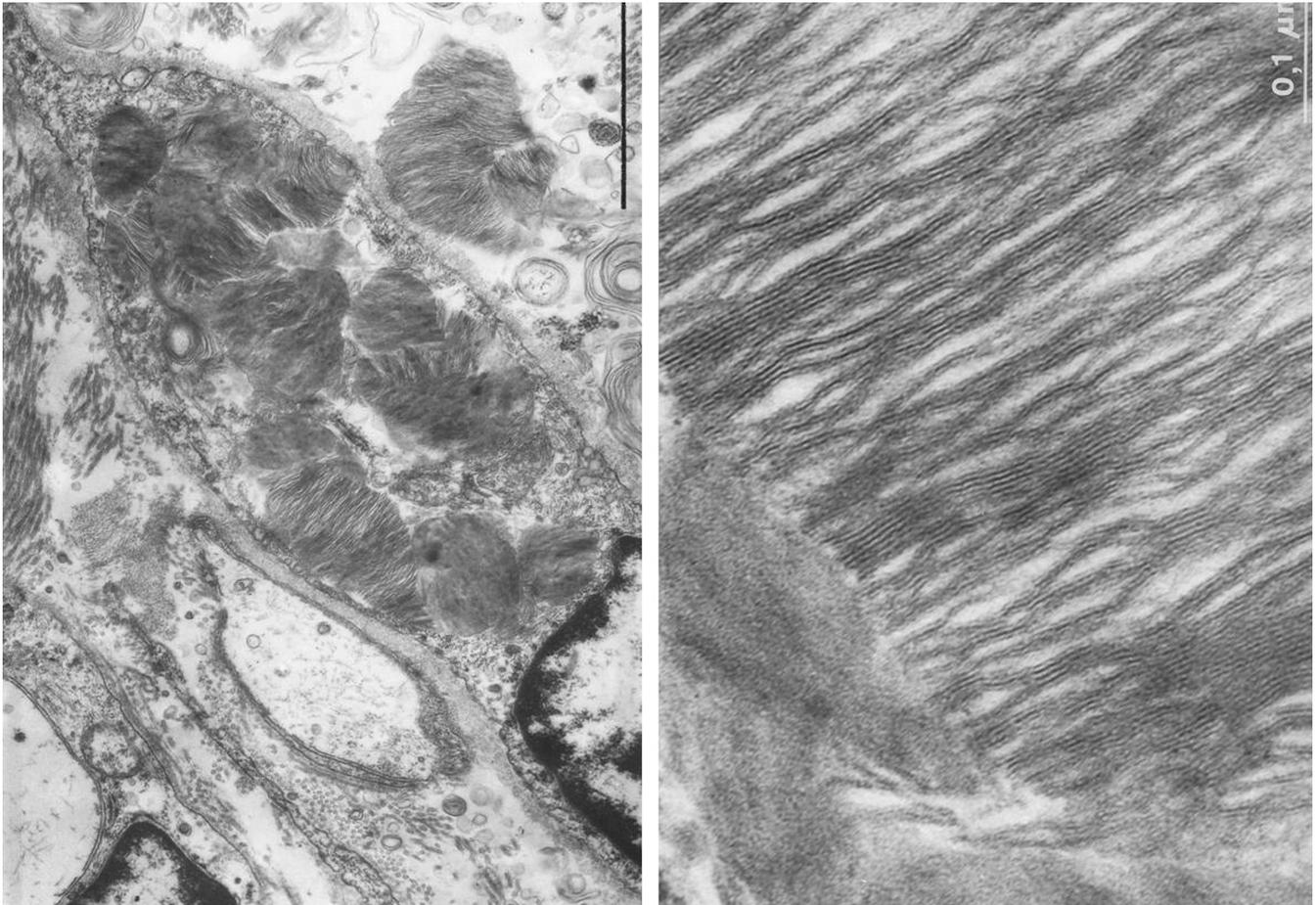


Fig. 14. Electron microscopic image of the stored material of our patient with Fabry's disease

These cases were also discussed with the colleagues in Vienna, meanwhile the molecular pathological examinations were completed at the University of Debrecen. The cases were published in the *Brain* with the following title: *Megadolichobasilar Anomaly With Thrombosis in a Family With Fabry's Disease and a Novel Mutation in the Alpha-Galactosidase A Gene* (11). Shortly after the publication, it became possible to treat Fabry-patients, and some of the family members may already be happy with this opportunity.

Changing Times – Changing Diseases

In 2014, our neuropathology laboratory turned 50 years old. On the occasion of the anniversary we published an article in the medical journal *Orvosi Hetilap* (18). Nearly 5500 autopsy examinations were carried out during the preceding 50 years. The documentation reflects on variations in the occurrence of diseases, and it draws attention

to those disorders, which can be prevented or treated today, but may represent diagnostic challenges.

Measles-related subacute sclerosing panencephalitis caused death in 13 cases, the last occurred in 1991. The mandatory vaccination against the causative morbilli virus has eliminated this severe neurological complication.

Fourteen lives were lost due to herpes simplex encephalitis, including the last case that occurred in 1999. Feasibility of early diagnosis and the availability of acyclovir therapy resulted in better outcome without fatality. Tuberculous meningitis still occurred in most recent years, although only sporadically. Recognition of this condition is not straightforward due to its rarity, considerations for this disease are often omitted from the routine differential diagnosis. The low mortality rates in tick-borne encephalitis dropped further after the introduction of vaccination, 8 cases were documented

altogether. With our colleagues in Vienna, we published two reports on tick-borne encephalitis (12, 13).

The last fatal cases of neurosyphilis were seen in the 1990s. However, syphilis itself has not disappeared, and the number of cases with newly acquired infection continues to rise.

Meningitis leukaemia caused the death of 20 patients, mainly children, between 1972 and 1987. It was a sad time for me to witness this as a neurologist. I wrote also my PhD dissertation on *Neuropathological features of leukemias and lymphomas*. Introduction of intrathecal methotrexate and radiation therapy made the prevention and effective treatment of meningitis leukaemia possible (19, 20). However, a careful coordination of these treatment's modalities is important as nervous system complications may develop in the form of disseminated necrotizing (Methotrexate) leukoencephalopathy. We had four such cases, we needed Professor Herbert Budka's help to diagnose the first one.

Among patients and colleagues – The establishment of the West Pannon Neurological Forum, Szombathely, 1998

Fifty years is a long time, many things have happened apart from the events in the neuropathology laboratory. I would like to highlight two of these.



Fig. 15. Ceramic statue of Maria Geszler: *Falling figure*. Maria Geszler's ceramic exhibition and the scientific meeting on neurorehabilitation opened at the same day.

In the 1980s, the rehabilitation of neurological patients had an increasing emphasis. This was the beginning of the golden era of neurorehabilitation – not only of neuropathology as Herbert Budka referred to in his recently published *Reflections* (21). In Szentgotthárd – a town next to us – a large rehabilitation hospital was established on the site of a former pulmonology sanatorium. Together with the hospital's director we visited similar institutes in Austria. We contacted Professor Gerhard Barolin, who was the main organizer of the neurological patients' rehabilitation in Austria. My friend divided his rehabilitation hospital into three parts and reserved one for neurorehabilitation. In 1988, we organized a two-day scientific meeting on neurorehabilitation entitled *Current Issues in Neurorehabilitation*, with guest participation of Austria, Switzerland and Germany. In a similar form, the gathering was repeated in 1993. These were the first events in Hungary dealing exclusively with neurorehabilitation. Maria Geszler's ceramic exhibition in the Picture Gallery and the scientific meeting on neurorehabilitation opened at the same day, one after the another in 1993.



Fig. 16. One of the West Pannon Neurological Forum's program booklets with crests of the host cities

Szombathely is located on the western border of Hungary, near Vienna, but far from the Universities of Budapest and Pécs. It became clear, that our county and the three neighboring counties need to work together. Nearly one and a half million people live in this area. This way, we established the West Pannon Neurological Forum with its first meeting in 1998 in Szombathely (22), for neurologists, neurosurgeons, and neurorehabilitation physicians. Neu-

ropathology was represented consequently by our department. This one-day meeting is held every six months in one of the cities of the four counties. The gatherings are mainly based on case studies with an educational lecture. The event created dialogues among the doctors of these four counties and helps them to solve medical problems. The 50th anniversary meeting will take place next year.

Spotlight on rare diseases

I retired in 2002 and started to work full-time at the Department of Pathology. I took the Neurohistology Laboratory with me: the lab had a better, more spacious place here. Sections were always performed in the presence of clinicians and then the evidence was always compared with the results of radiological examinations in the presence of radiologists. We also collaborated with the Laboratory of Molecular Pathology, and several published works resulted from this cooperation (23-27).



Fig. 17. Thrombosis of the basilar artery in a young woman. Comparison of the pathological with the radiological findings.

The Department of Pathology organized the clinico-pathological conferences since the early 1950s. These were implemented on a Soviet model.

Professor Pavel Ivanovich Sapochkov said at that time: *I work at Clinic No. 1 in Moscow and our clinic is extremely restless (sic) when it comes to the patient's autopsy. Pathology examines the relationship between clinical and pathological diagnosis the most accurate way. Every two weeks the doctors are called together and the diagnostic differences in each case are talked over, and it's a shame (sic) for a doctor to be invited to such a hearing, where his fault is discussed.*

After moving on to the Pathology, I was entrusted with organizing these conferences, every three months, with mandatory attendance for hospital physicians. It became clear that the handling of these cases – where an error has occurred – falls within the competence of other forums. We expanded the discussions of cases by talking not only about the deceased ones, but also the healed patients. The conferences no longer featured the doctors who worked poorly, but those who worked well. And we gradually set the focus of the conference on cases that were interesting in some way, predominantly discussing rare diseases.



Fig. 18. Our books about rare diseases



Fig. 19. The lecture hall of the hospital, named after György Romhányi, the venue for conferences on rare diseases

The Pathology Department offers a very good angle to observe to the medical activities of our very large hospital and it is easy to discover interesting cases. Over the past nearly twenty years, we have written five books about rare diseases relying on these cases (the sixth one is also in progress) with lots of coloured illustrations. Professor

Romhányi said: *One case is not a case.* But we relied on 260 cases to present the rare diseases – with the required information and notes – we have experienced during our work. And in addition, at the hospital's lecture hall was named after Professor Romhányi.



Fig. 20. The Quintessenz Leipzig Flute Ensemble, in the middle Anna Garzuly Wahlgren

The music of the 21st century

The nice and talented ceramic artist, Maria Geszler is the one for whom I came back from the *bewitching* western world. She is my wife now for many-many years.

Her great-grandmother sang so beautifully as a young girl, that after a concert she was kissed by Franz Liszt on the forehead. The grandmother, Margit Tessényi, a student of Vianna da Motta, was a well-known pianist, her father, György Geszler a composer and pianist, who gave concerts also with Béla Bartók. It is no coincidence that her sisters are also musicians. Our daughter Anna endowed the talent as a gift. She studied in Budapest, Munich and New York, and became a flutist. She frequently participated in music competitions and was usually among the winners, so she could even give an evening at Carnegie Hall in New York. Her Swedish husband, Henrik Wahlgren is an excellent oboist. They were both members of the Gewandhaus Orchestra in Leipzig, but our daughter is currently a professor of chamber music at the *Musikhochschule* in Leipzig and a flute professor in Weimar. She was a founding member of the *Quintessenz Leipzig Flute Ensemble*, which has now celebrated its 20th anniversary. All three of our grandchildren also play and sing, so music has become a constant companion of our lives.

We shared a lot of things: good ones and sad ones too. But we are still working. I work in my hospital, as Maria does in her studio, or having a lecture somewhere, exhibiting in Europe, or elsewhere in the world. She is a ceramic artist well-known everywhere. She won a lot of prizes: last year she was awarded with the Grand Prix in Valauris, the internationally famous Ceramics Biennial.

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Fig. 21. Maria Geszler: Arctic meteorite, porcelain object

One of her artworks can be seen on the June issue's cover of *New Ceramic* – the most famous magazine for ceramic artists – and a long article about her in the journal. There, she writes following:

Our nerves are strained like wires, we live among electrical discharges of love and hatred, above our heads there is special buzz of cables, that is the music of the 21st century. We all dream to see something new, to live, to discover, to understand. This experience has pushed mankind since the Stone Age, even in the millennium of moon travel. Who didn't feel something like this? Wandering on the banks of rivers, standing on the sandy shores of the seas, at the foot of the mountains, looking at the peaks? Who didn't feel the attraction of the unknown? To go as far as possible, to see the horizon, to discover the mountain peaks, to reach the skies.

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