IF I HAD TO CHOOSE AGAIN, I'D STILL BECOME A NEUROSURGEON!

An Interview with Uğur Türe, M.D. on Neurosurgery

Neurosurgery Section

1. How has the development of technology affected brain tumor surgery today? How beneficial are innovations like 3D imaging via MRI and tractography?

Each of these technologies is incredibly valuable. As a surgeon, it's essential to keep up with these advancements, to learn about them, use them actively, and even contribute to their development. But it doesn't stop there—in fact, that's where it begins.

We have many high-tech devices at our disposal; I use them in my own practice. But that doesn't mean everything is solved. Back in the time of my mentor, Professor Yaşargil, many of these devices didn't exist—yet he still performed some of the most successful surgeries. Technology provides an advantage, but it's not enough on its own. You could have a Formula 1 car, but if you don't have the skills to drive it, it's meaningless.

In short, these advancements are incredibly valuable and have greatly contributed to my own practice, but they are not the end of the story. To truly make use of them, you must have the knowledge, experience, and training to do great work with these tools.

2. The 2021 brain tumor classification highlights the role of the IDH gene in differentiating glial tumors. How might a glial tumor's response to vorasidenib affect surgical decision-making?

There have been major developments in genetic studies. Each new piece of information opens up a new direction. We are still trying to fully understand brain tumors and their behavior. While other cancers have clearer pathways and treatments, research on brain tumors is still ongoing—and must continue to be supported.

Think about how long it took after discovering bacteria to develop the first antibiotic—it was a century. The same will likely apply to brain tumors: advanced treatments will become possible in the future, but there's still much to be done, and it won't be easy. Still, these new treatments will only make "a well-done surgery" even more valuable.

3. Are there situations in which gamma knife treatment is more advantageous than open surgery, or vice versa?

Gamma Knife is not a new invention—it was discovered in the 1960s. People often refer to it as a "laser," but it's actually Cobalt-60, a form of radiation. Gamma Knife was developed by Professor Leksell, a neurosurgeon in Stockholm. But it was his student, Professor Steiner, who introduced it into neurosurgical practice and published the first major studies on it.

I had the opportunity to get to know this great mentor personally. He even visited our department as a guest professor. During his visit, we evaluated over 100 patients together. And despite his expertise, he did not recommend gamma knife for any of them. He always emphasized how carefully patients need to be selected for this method.

Unfortunately, there's a growing misconception today that "Gamma Knife is the answer to everything" and that "it has no side effects." Gamma Knife is a valuable tool and can be preferred in certain cases—but it is not a substitute for good surgery.

4. Do you think methods like transarterial chemoembolization (TACE), commonly used in general surgery for tumors, could be effective for brain tumors?

These methods have been tried, but no promising results have emerged so far. The brain is very different from other organs. It has complex structures like the blood-brain barrier, which we still don't fully understand. Right now, glioblastoma (GBM) remains our biggest challenge, and unfortunately, we are still unable to significantly improve survival outcomes for these patients.

Many new treatments are being tested in different centers, but we still haven't seen results that give us real hope.

5. The insular region is a very complex area, anatomically speaking. There are deep gray matter nuclei and important white matter tracts and capsules. What precautions do you take when operating on tumors in this area to preserve function?

Insular tumors are located in the cortex and white matter and do not invade the putamen. It's absolutely crucial to preserve the putamen in these surgeries. The first step in doing that is to understand the anatomy of the region thoroughly.

Like with all brain structures, to truly understand the putamen, you must have dissected cadaver brains. After that, one must watch properly performed surgeries and receive solid surgical training. Only then, during your own operations, can you begin to recognize and protect the putamen.

We are fortunate to be a department that has access to advanced surgical technology. In these operations, we use intraoperative ultrasound and intraoperative MRI. This allows us to check during the surgery whether the tumor has been completely removed.

From a technical standpoint, you have to protect the putamen, corona radiata, internal capsule, and the very important vessels supplying the area—such as the lenticulostriate arteries. All of this considered, these are extremely challenging surgeries—and that's why training a skilled neurosurgeon takes time and significant experience.

6. Finally, what would you like to say to young doctors or students?

Looking back from the past to today—and now, looking from today to the future—neurosurgery is just getting started! It's an open field, welcoming every new idea and every hardworking doctor or scientist.

The young people who can combine surgical neuroanatomy with hands-on surgical skill are the ones who will take this field forward. If the next generation works harder than we did, they'll add many new things to the discipline.

I strongly encourage young people to consider working in this field. When I look back at the life I've spent in neurosurgery, here's what I think: I'm so glad I became a neurosurgeon. If I had the chance again, I'd still choose to become a neurosurgeon.