

# Understanding Sen. McCain's Glioblastoma Diagnosis



By Jamie Wells, M.D. — July 19, 2017



Credit: Wikipedia [1]

Senator John McCain's office just released a [statement](#) [2] from the Mayo Clinic Hospital in Phoenix detailing his newly diagnosed Glioblastoma brain tumor. It [had been disclosed](#) [3] he was recovering from a surgical excision of a blood clot performed on Friday, July 14, 2017 that was discovered at a routine annual physical.

The blood clot was removed through an opening made above his left eye, described as a “minimally invasive craniotomy with an eyebrow incision.” Craniotomies come in multiple forms—some large while others are small, which is what *minimally invasive* describes. When less extensive surgical incisions are made, the recovery from the procedure itself is usually more swift and with less complication. It typically entails less bleeding and since the cases are usually shorter in duration with smaller exposures of tissue has a reduced chance for infection. But, where the lesion or issue is and how extensive determines the approach for removal, among other considerations.

*Craniotomies* involve surgically opening the skull. There are times—in particular with head traumas when clots have formed—when a *bone flap* or skull segment is taken out with the site closed in its absence so the brain has room to swell, to be replaced down the line in a person's recovery. These are called a *craniectomy*. This would not be typical of a minimally invasive case. To perform a craniotomy, whether it be minimally invasive or not, requires cutting through several layers including skin and bone. Like with most diseases of the body, everything comes down to real estate.

Location. Location. Location matters significantly when it comes to diseases of the brain and

central nervous system. Negotiating important surrounding structures— whether it be by surgical means, radiation or chemotherapy— requires precision so as not to damage speech centers, portions that control executive judgement, areas that make you *you* or are responsible for sight, involuntary breathing and consciousness, for instance.

Fortunately, Senator McCain's procedure was described as successful. The tissue obtained on July 14th has returned from pathology where it was determined to be a primary brain tumor called *Glioblastoma*. The word *primary* means the tumor originates from the brain as opposed to being a metastasis from some other cell type or location in the body. It is a matter of routine for any material obtained with biopsies or surgical resections to be sent to pathology for testing to decipher whether it is healthy tissue or infected or cancerous etc. The formal statement goes on to note "Scanning done since the procedure (a minimally invasive craniotomy with an eyebrow incision) shows that the tissue of concern was completely resected by imaging criteria. The Senator and his family are reviewing further treatment options with his Mayo Clinic care team. Treatment options may include a combination of chemotherapy and radiation." This is good news that it appears fully resected on imaging; however, this is not the end of the story with tumor diagnoses or this particular type. Given that glioblastomas are known to be an aggressive tumor that has a high incidence of recurrence, discussions of chemotherapy and radiation are typical as the goal is to be certain microscopic cells don't remain. These tiny cells don't necessarily appear on imaging studies, so in many scenarios radiation and/or chemotherapy are intended to ensure such cells don't exist, let alone proliferate.

As with most cancers— in particular for those known to be more aggressive, this is usually a concern. So follow-up care will traditionally involve frequent scans every few months or an even shorter interval dependent on the tumor type. Radiation and chemotherapy regimens often play a role in the more aggressive situations. The rate limiting steps with the brain go back to location along with an individual's underlying clinical status. With radiation, can come surrounding swelling as can natural healing after surgery. So, when someone has these kinds of illnesses in the brain, location can pose a limiting factor for treatments. It is not uncommon in the more extreme situations for treatment plans to explore experimental therapies (e.g. immunotherapy) with clinical trials-- but, each case is unique with a myriad number of influencing factors.

It is wonderful to hear "The Senator's doctors say he is recovering from his surgery 'amazingly well' and his underlying health is excellent. Senator McCain appreciates the outpouring of support he has received over the last few days. He is in good spirits as he continues to recover at home with his family in Arizona. He is grateful to the doctors and staff at Mayo Clinic for their outstanding care, and is confident that any future treatment will be effective. Further consultations with Senator McCain's Mayo Clinic care team will indicate when he will return to the United States Senate."

To learn more about brain tumors, treatment options and Glioblastomas especially, review my two-part series where I interview [Dr. Gregory Riggins](#) [4], Professor of Neurosurgery and Oncology and Director of the Brain Cancer Biology and Therapy Research Laboratory at Johns Hopkins: [Brain Tumors: Fact Vs. Fiction - Part I](#) [5], [Brain Tumors: Fact Vs. Fiction - Part II](#) [6]. [6]

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**Links**

[1] [https://upload.wikimedia.org/wikipedia/commons/thumb/e/e1/John\\_McCain\\_official\\_portrait\\_2009.jpg/220px-John\\_McCain\\_official\\_portrait\\_2009.jpg](https://upload.wikimedia.org/wikipedia/commons/thumb/e/e1/John_McCain_official_portrait_2009.jpg/220px-John_McCain_official_portrait_2009.jpg)

[2] <https://www.mccain.senate.gov/public/index.cfm/2017/7/statement-from-the-office-of-senator-john-mccain>

[3] <https://www.mccain.senate.gov/public/index.cfm/press-releases?ID=FF8ABBEC-F6BB-45F6-8E8D-A4D3BA906C83>

[4] [http://www.hopkinsmedicine.org/neurology\\_neurosurgery/research/labs/brain-cancer-biology-lab/](http://www.hopkinsmedicine.org/neurology_neurosurgery/research/labs/brain-cancer-biology-lab/)

[5] <http://www.acsh.org/news/2016/10/10/brain-tumors-fact-vs-fiction-part-i-10281>

[6] <http://www.acsh.org/news/2016/10/11/brain-tumors-fact-vs-fiction-part-ii-10285>