

Glioblastoma: MRI Imaging & CT Scan Reports

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Case Report

This was a case of a patient who named Sophia Olivia suffering from Glioblastoma and we found out the tumor only during stage 4 cancer, she had the symptoms like Constant headaches, Seizures, Vomiting, Trouble thinking, Changes in mood or personality, Double or blurred vision, Trouble speaking and they are in secondary phase of symptoms which are much more adverse than the primary phase. These usually don't go for the secondary phases but as she had neglected them without consulting a physician. She was very bad at responding to medicine she was also went to coma while getting treated for around 2 to 3 months. This Glioblastoma was common with the age groups in between 17 to 35. Sophia Olivia started taking the treatment from June 2016. As I have treated Sophia I can clearly state that she had a tumor in her brain from around 3 years. If she could have started taking the medicines from 2 years before at least she might be with us now. She passed away with huge brain haemorrhage after she went to coma for the second time. Immediately after 4 days she passed away, she survived till August 18, 2017. We have tried using several medicines like Avastin(intravenous), Temodar (oral),vincristine (intravenous), Camptosar(intravenous) irinotecan (intravenous), temozolomide(oral), bevacizumab (intravenous), Gliadel Wafer (implant), procarbazine (oral), BiCNU (intravenous), carmustine(intravenous), Temodar(intravenous), Matulane (oral), Vincasar PFS(intravenous), carmustine in polifeprosan(implant), temozolomide (intravenous).

This study was chosen to demonstrate the signal characteristics of the CNS cavernoma on various MR sequences.

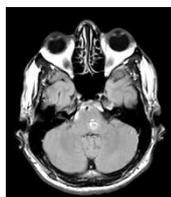


Figure 1: MRI of brain stem

Evidence of approximately 14 × 11 mm well demarcated rounded lesion at ponto-medullary junction, on posterior medial aspect. The lesion show heterogeneously hyper intense signal on T₁WI and "popcorn" like signal on T₂WI. The SWI and GRE (T₂') show haemosiderin related susceptibility artefacts in this lesion with a well-defined hypo intense rim note on GRE images. No surrounding edema noted. No other lesion noted. No obvious evidence of dural venous anomaly (Figure 1).

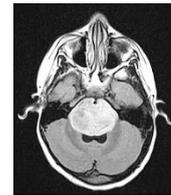


Figure 2: Low grade brainstem glioma

A brainstem glioma is a cancerous glioma tumor in the brainstem. Around 75% are diagnosed in children and young adults under the age of twenty (Figure 2).

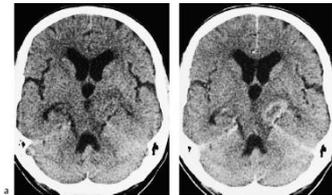


Figure 3: MRI scan brain butterfly tumor

Butterfly gliomas are a high grade astrocytoma, usually a glioblastoma (WHO grade IV), which crosses the midline *via* the corpus callosum (Figure 3) [1].

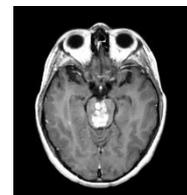


Figure 4: Brain stem glioma MRI

Brainstem gliomas consist of a heterogeneous group which vary greatly in histology and prognosis (Figure 4).

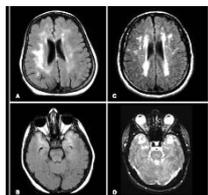


Figure 5: MRI of brain with depression

Migraine and depression were frequently associated, 38% and 68% respectively. Hyperintensities appear as "bright signals" (bright areas) on an MRI image. Primary brain tumors encompass a wide range of tumors depending on the analysis of Magnetic Resonance (MR) imaging data of glioma patients (Figure 5).



Figure 6: Toxoplasma gondii CT scan

Toxoplasma gondii is found ubiquitously and antibodies to the organism can be identified in 30% of all humans. SDH can happen in any age-group, is mainly due to head trauma and CT scans are usually sufficient to make the diagnosis (Figure 6).

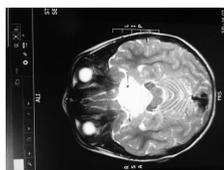


Figure 7: Glioblastoma: Radiography

The tumor measures 43 mm × 40 mm × 33 mm and restricts blood flow to eyes. This caused to severe vision loss. The tumor is very close to other important structures in brain (Figure 7).



Figure 8: Brain abscess CT scan

In the earliest stages of the evolution of a cerebral abscess, a CT scan of the brain may be negative or it may show subtle nonspecific findings (Figure 8) [2]. Brain abscess is a potentially life threatening condition.

Four stages are recognised, which distinct pathological and radiological features:

1. early cerebritis
2. late cerebritis
3. early capsule
4. late capsule

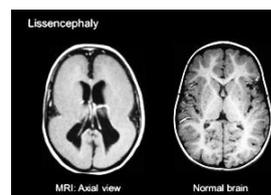


Figure 9: Lissencephaly brain vs. Normal brain

Researchers used brain cell cultures derived from reprogrammed skin cells of patients with lissencephaly, a rare inherited brain disorder. Skin cells were taken from lissencephaly patients, converted into iPS cells, and then cultivated into neuronal stem cells (Figure 9) [3].

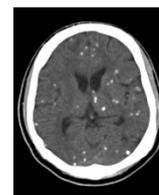


Figure 10: Neurocysticercosis calcification

Neuro Cysti Cercosis (NCC) is caused by the CNS infection with the pork tapeworm *Taenia solium*, which is endemic in most low-income countries. CT scans and MRIs of the brain are both used for diagnosis. CT has a high sensitivity and specificity in most forms of neurocysticercosis and is superior to MR (Figure 10) [4].



Figure 11: Tumor on optic nerve

An optic nerve glioma is a rare type of brain tumor found in the optic chiasm, where the optic nerves cross. The most common primary tumour of the optic nerve is the benign glioma. This low-grade astrocytoma usually can be followed without intervention. Optic nerve atrophy or papilledema; Associated with neurofibromatosis type 1. This is a case of type 1 neurofibromatosis, also known as von Recklinghausen Disease (Figure 11).

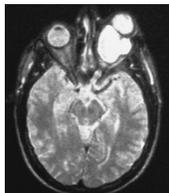


Figure 12: Optic nerve glioma neurofibromatosis

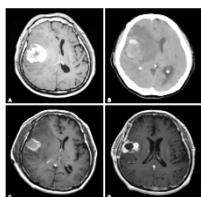


Figure 13: metastatic brain tumor CT

Metastasis to the brain is the most feared complication of systemic cancer and the most common intracranial tumor in adults (Figure 12). We retrospectively reviewed the medical records and imaging data of 59 patients with metastatic brain tumors from hepatocellular carcinoma (Figure 13).



Figure 14: CT scan brain concussion

However, more than 75% of TBIs are mild and referred to as concussion; But sometimes there can be a concussion, bleeding on the brain, or cracks to the skull. Brain imaging soon after Mild Traumatic Brain Injury (mTBI) or mild concussion can detect tiny lesions that may eventually provide a target (Figure 14).

References

1. Ragland RL, Wagner LD, Huang YP, Som PM, Teal JS, et al. (1990) Streaming hypointensity in hemorrhagic glioblastoma multiforme. *Neuroradiology* 32: 241-243.
2. Zwaan M, Schwieder G (1990) A primary immunocytoma of the CNS simulating a butterfly glioblastoma of the corpus callosum. *Rof* 152: 118-119.
3. McKeever PE, Feldenzer JA, McCoy JP, Laug M, Gebarski S, et al. (1990) Nuclear parameters as prognostic indicators in glioblastoma patients. *J Neuropathol Exp Neurol*. 49: 71-78.
4. Greiner R, Blattmann H, Thum P, Bösiger P, Coray A, et al. (1990) Anaplastic astrocytoma and glioblastoma: pion irradiation with the dynamic conformation technique at the Swiss Institute for Nuclear Research (SIN). *Radiother Oncol*. 17: 37-46.