

# Abstract

## **PREOPERATIVE HIGH DOSE CHEMOTHERAPY FOR GLIOBLASTOMA: REPORT OF A 6 YEAR DISEASE-FREE SURVIVAL**

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**A 25 year old male presented with a residual 3 X 3 cm. growing mass 1 month after the incomplete resection of a large glioblastoma multiforme (GBM). After he refused radiation therapy (RT) chemotherapy was started with high dose methotrexate (HDMTX) at the dose of 12 Gm/M escalating to 30 Gm/M with leucovorin rescue (LR) given sequentially with high dose carboplatinum (HDC) followed by autologous peripheral stem cell reinfusion (PSCR).**



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## **Abstract (continued)**

After 6 courses of HDMTX with LR and 2 courses of HDC and PSCR one dose of stereotatic RT was given to the residual (less than 1 cm.) mass. One month later complete surgical resection of the lesional area was performed. Because of wide resection through the ventricle, 2 doses of HDMTX (30 Gm/M) with LR were given post-operatively. Over six years later, the patient is alive with no evidence of recurrent disease. He never received other RT, and has normal cognitive and neurologic function. Based upon this experience, a trial of preoperative chemotherapy and fractionated stereotatactic RT prior to (and making possible) a curative surgical procedure is proposed for the treatment of GBM. This model to make tumors (whose local recurrences cause death) more surgically curable through the use of effective preoperative therapy is an extension of our successful treatment of bone and soft tissue sarcomas.

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# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

## ***Introduction:***

***High Grade Gliomas Are Cured Only By Total Microscopic Surgical Removal.....But***

***Surgery Is Hardly Ever Curative Because Of Residual Infiltrating Microscopic Disease, Or Because Of Tumors That Are Too Big To Totally Remove Without Devastating Neurologic Sequelae.***



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# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

## ***Introduction (Continued):***

***In The Past 30 Years The Cure Rate Has Not Been Increased With All Types Of Postoperative Radiation Therapy And Chemotherapy.***

***These Modalities Can Only Modestly Increase Survival, The Quality Of Which Is Greatly Diminished By the Effects Of Irradiation On Normal Brain Tissue.***



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# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

## ***Purpose Of Proposed Study:***

***To Utilize **Preoperative** Chemotherapy To Reduce The Size Of The Tumor. This Action Occurs At The Rapidly Growing Infiltrating Peripheral Border, Thereby Eliminating Microscopic Invasion Of Surrounding Brain As The Tumor Shrinks.***

*****Preoperative** Stereotactic Irradiation Can further Shrink The Tumor And Produce Reactive Gliosis Around The Residual Mass, Making Delayed Surgical Removal Potentially Curative.***



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# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

**Fig. 1**

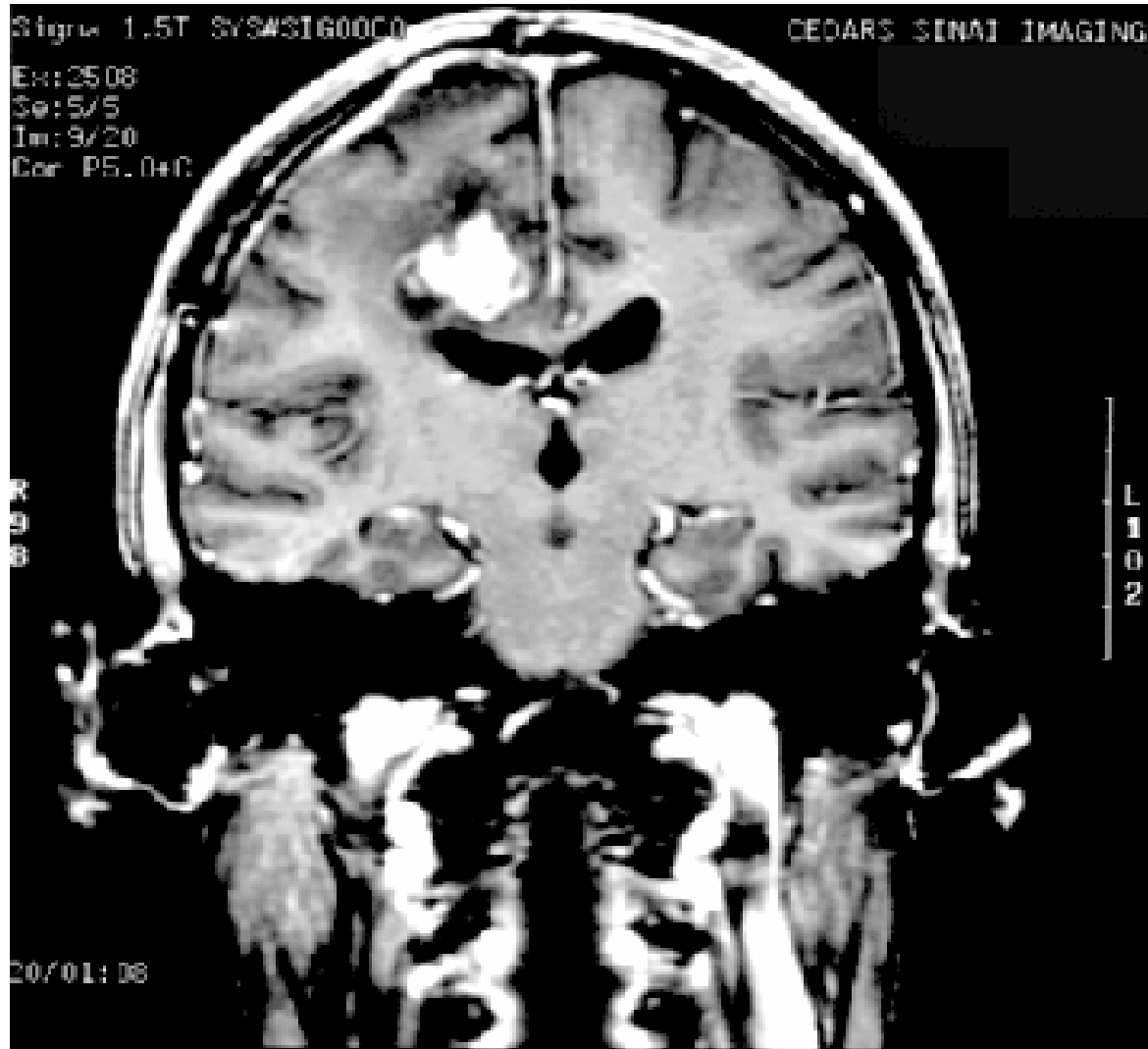
**Large Enhancing Mass: Biopsy Showed "High Grade Glioma"**



# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

**Fig. 2**

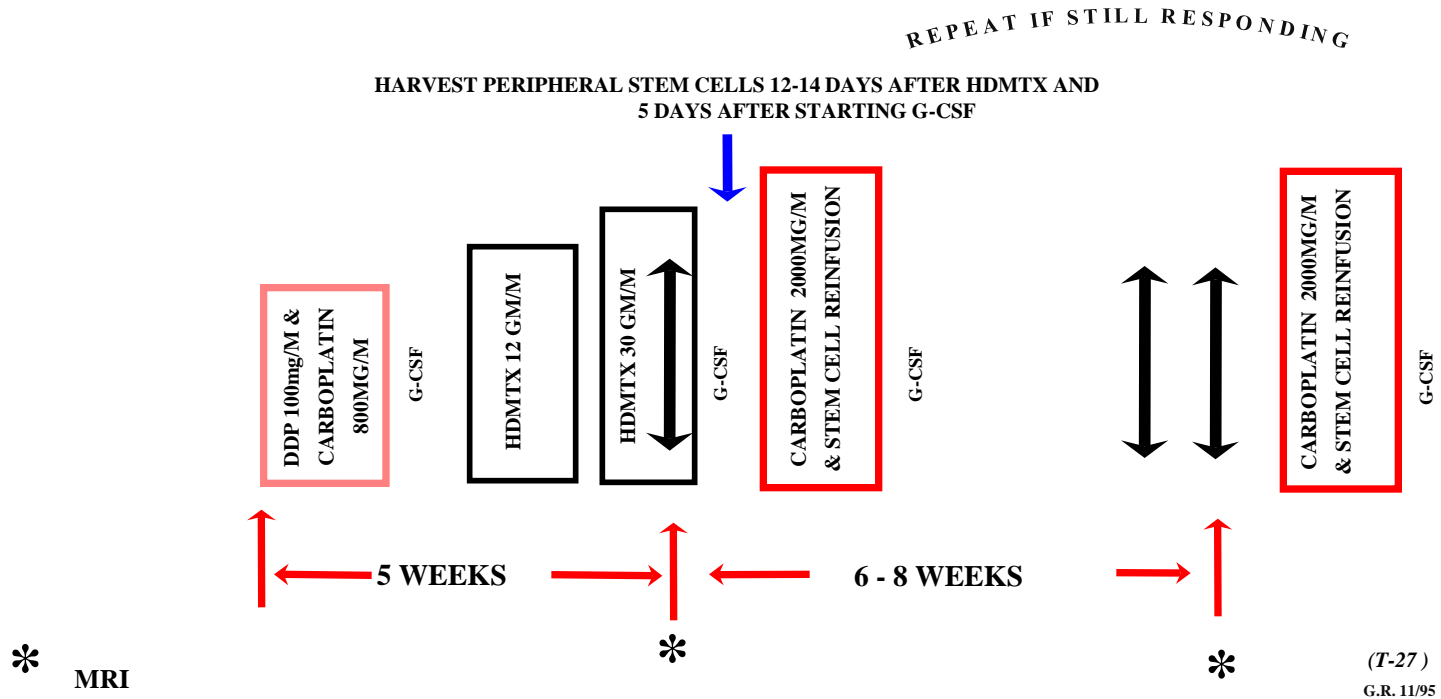
**Residule/Recurrent Tumor 2 Mo. After Attempted Removal at UCSF  
Surgical Specimen Was Read As Glioblastoma Multiforme**



# PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:

Fig. 3.

Preoperative Chemotherapy Was Given For 6 Mo. Followed By Single Dose Stereotactic R.T. 2 Mo. Later Surgery Was Performed

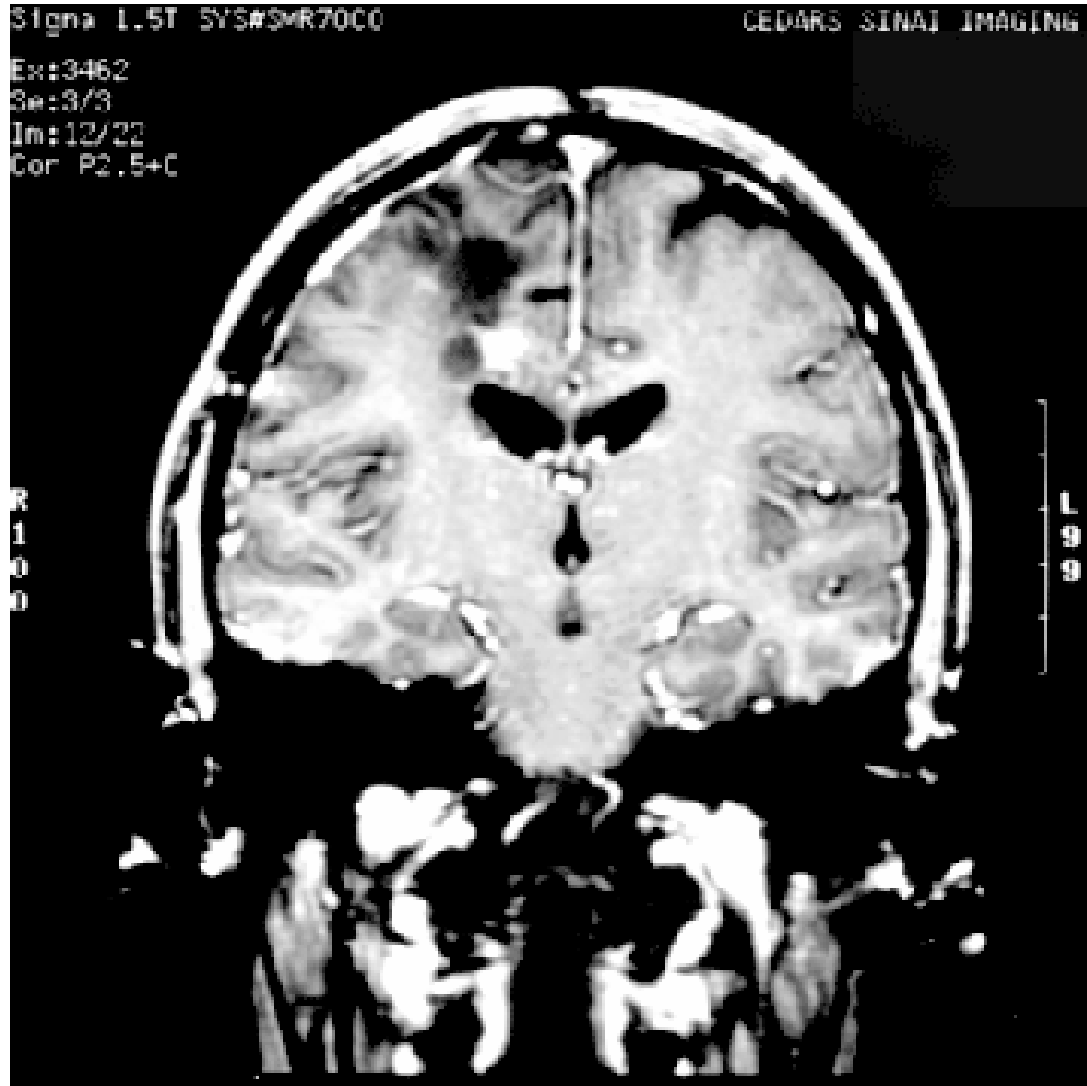




# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

**Fig. 4.**

**Response To Preoperative Therapy (8 Mo. After Recurrence)**



# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

**Fig. 5.**

**After Curative Resection Chemotherapy Was Stopped After 2 More Doses of HDMTX (30 Gm./M<sup>2</sup>) Last Neg. MRI Was March, 2001**



# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

## ***Treatment Strategy:***

- 1. Biopsy (Stereotactic) Only To Avoid Wide Field Tumor Contamination.***
- 2. Aggressive Chemotherapy (Very High Dose Methotrexate And High Dose Carboplatinum With Stem Cells)***
- 3. Stereotactic R.T. (Fractionated)***
- 4. Radio-Enhancing Chemotherapy (HDMTX)***
- 5. Curative Surgery***



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***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:  
Advantages Of This Treatment Strategy:***

- 1. Potentially Can Increase The Cure Rate For High Grade Gliomas, At The Very Least Increases Quality Overall Survival***
- 2. Limited Chemotherapy (With Low Carcinogenic Potential)***
- 3. Limited Radiation Therapy To Prevent Cognitive Dysfunction And Normal Brain Tissue Necrosis***



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# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

## ***Conclusions:***

- 1. This Different Approach is:  
Feasible  
Tolerable In All Age Groups  
Potentially Curative***
- 2. With Modern Medical Management  
"Emergency Surgery" is Seldom Necessary***
- 3. Preoperative Therapy Has No Detrimental  
Effect On Eventual Surgical Recovery.***



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# ***PREOPERATIVE CHEMOTHERAPY FOR GLIOBLASTOMA:***

***"The Definition Of An Idiot Is Someone  
Who Keeps Repeating The Same Thing  
And Expects Different Results"***

*Mark Twain*



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