Immunohistochemical aspects in different portions of Glioblastoma (solid and infiltrative)

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Introduction

The glioblastoma is a malignant tumor, responsible for about 50% of primary tumor of central nervous system (CNS).

However, not much is studied in infiltrative portion of glioblastomas about immunohistochemical characteristics when compared to the solid portion. Specially if this could mean that the infiltrative portion is less aggressive than solid portion.

As this two portions have different characterisics at macroscopy and in image studies as well, we could imagine that they have different behavior in immunohistochemical studies. And, as largely accepted nowadays, the gross total ressection (ressection of solid portion) has an important role in a longer survival, so we can assume that the solid portion is immunohistochemically more aggressive than infiltrative portion.

Learning Objectives

Show the increasing role of immunohistochemistry in glioblastoma different portions, as a potential targets for future treatments.

Results

Table 1

	Final Diag	EE	Chi2
GBM	10	9	p=0.30
NGBM	0	1	

GBM – Glioblastoma; NGBM – Not glioblastoma

Final pathological finding compaired with enhanced edge pathological finding

Methods

We made a retrospective study with data collected from 10 consecutive adult patients (18 y/o or more), from both genders, with confirmed diagnostic of glioblastoma. With surgeries performed at Hospital São Paulo, by Neurosurgery discipline of Escola Paulista de Medicina/UNIFESP. All of them with pre operative MRI and post operative MRI (within 48 h from surgery) showing gross total ressection of the lesion (total ressection of solid portion of glioblastoma), between 01/2009 and 12/2012.

Table 2

	EE	NE	Chi2
GBM	9	1	p=0,0003
NGBM	1	7	

EE – enhanced edge; NE – not enhanced

Pathological findings in enhanced edge versus not enhanced edge

Table 3

	EE	NE	Chi2
GFAP +	10	10	p=1
GFAP -	0	0	

GFAP expression in both parts studied (enhanced and not enhanced edges)

Table 4

	EE	NE
Case 1	60,00%	-
Case 2	80,00%	60,00%
Case 3	-	-
Case 4	60,00%	40,00%
Case 5	70,00%	40,00%
Case 6	70,00%	-
Case 7	60,00%	-
Case 8	70,00%	60,00%
Case 9	80,00%	60,00%
Case 10	70,00%	60,00%
Mean	71,67%	53,33%
SD	7,53	10,33
p (paired t-test)		0,002

p53 expression at enhanced and not enhanced edges

Table 5

	EE	NE	Chi2
CD34 intense	10	2	p=0,0002
CD34 not intense	0	5	

CD34 expression at both edges (enhanced and not enhanced)

Table 6

	EE	NE	Chi2
VEGF 3+	10	1	p=0,00005
VEGF <3+	0	6	

VEGF expression at enhanced and not enhanced edges

Table 7

	EE	NE
Case1	40,00%	-
Case 2	50,00%	45,00%
Case 3	60,00%	-
Case 4	50,00%	-
Case 5	45,00%	8,00%
Case 6	60,00%	15,00%
Case 7	65,00%	50,00%
Case 8	50,00%	40,00%
Case 9	50,00%	35,00%
Case 10	5,00%	5,00%
Mean	42,43	28,29
SD	19,52	18,54
p (paired t-test)		0,03

Ki67 expression at both edges

Conclusions

We showed that the difference seen at macroscopy and image studies are also reflected on the expression of cellular and vascular immunohistochemical markers. And more, that expression is more intense in solid portion than the infiltrative portion.

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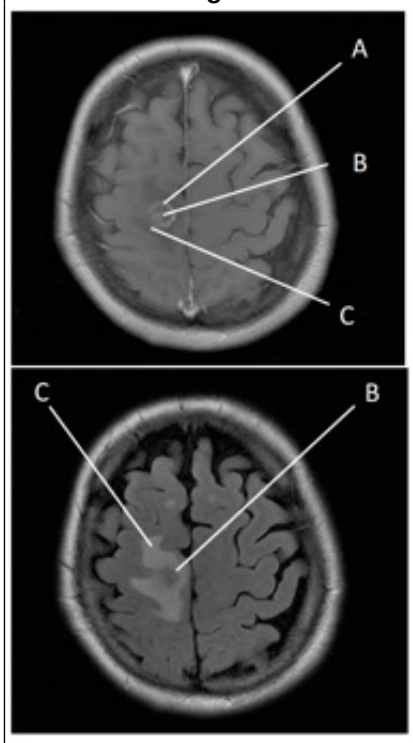
Image 1



T1 weighted MRI image (upper) and T2 weighted MRI image: A- Enhanced edge; B - Necrosis; C - Not Enhanced edge