



Astrocytic Brain Tumors in a Sub-Saharan African Population: Is the Relationship Between Location and Outcome an Age Dependent Prognostic Paradigm?

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Introduction

Although astrocytomas are the most common primary brain tumors worldwide,

they are still poorly reported in our environment.Moreso, clinical outcome determinants have been poorly investigated in our subregion

Methods

We prospectively studied adult patients with astrocytic tumors in 3 tertiary hospitals within southeast Nigeria over a 5 year period. Patients’ clinical data as well as radiology and histology reports were analyzed. Follow- up interval was 3months to 4.5 years. Data analysis was performed using SPSS version 17 with evaluation of confidence limits, Chi Square tests at the 95% level of significance

Results

Of 61 patients with neuroimaging features of brain astrocytoma , 46 patients had histological confirmation. Mean age was 43.4±1.7 years (95% CI), low grade tumors- 35.3±0.9years (95%CI), high grade tumor patients - 49.6±0.4 years (95%CI). 37 patients were male and 24 were female with M:F ratio of 1.5. Major complaints were headache and seizures in 70.5 %(43 patients) and 58.3 %(35 patients) respectively, Duration of symptoms was 2 months to 17 months with a mean of 9.6±1.7 (95%CI) months. 41 cases were supratentorial, 17 cases were infratentorial, while 3 cases were transtentorial. 33patients had microsurgical resections, 11 had biopsy only, while 31 had CSF diversion.13 patients had low grade tumors (WHO grades I and II) , while 36 patients were high grade(WHO grades III and IV). Survival rates after 1year and 3 years follow up were 77% and 61% for low grade tumors and 27% and 8.3% for high grade tumors. Tumors in the supratentorial compartment in patients below 45 years were associated with longer survival across the tumor grades (X2=7.9, df =1, p<0.05). Infratentorial location was associated with poor overall outcome as well as shorter progression free survival in patients below 45 years with high grade tumors (X2=5.7, df=1,p<0.05)

Conclusions

Supratentorial location is associated with better survival among younger adults with astrocytomas regardless of grade.

Learning Objectives

location and age significantly influence outcome of astrocytomas and should be key considerations in current paradigms of clinical prognostication.

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Table 1 and Fig 1A

Mean age(yrs)	1 year Survival(%)		3- year survival(%)	
	Tumor grade		Tumor grade	
I<45(≥45)	High grade	Low grade	High grade	Low grade
Infratentorial(X ² =5.7, df=1, p<0.05)	20(15)	65(58)	5.1(4.7)	57(55)
Supratentorial(X ² =7.9, df=1, p<0.05)	31(24)	83(71)	9.7(8.5)	67(61)
transientorial	29(27)	75(70)	7.9(7.5)	66(57)

Table 1. Relationship between Age, location and survival

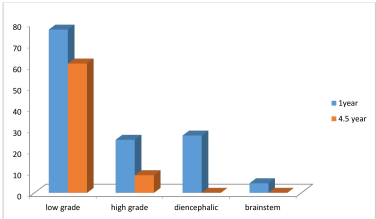
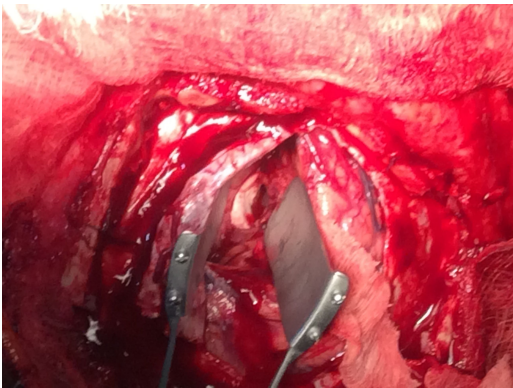


FIG 1A Showing relationship between location/ grade and outcome

Fig. 1



Anterior Transcallosal resection of low grade astrocytoma of the Lateral ventricle in a 25 year old lady with bilateral visual impairment