



# Chromosomal Aberrations in Atypical and Anaplastic Meningiomas: Prognostic Implications

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## Introduction

There is significant variability in the biologic behaviour of meningiomas especially atypical and anaplastic meningiomas that cannot be accounted for by just histology and grade of excision. The aim of our study was to analyse deletions in regions 22q, 18p11, 1p32 and 14q32 in grade II and Grade III meningiomas and their correlation with tumor grade and recurrence.

## Methods

59 samples from 50 cases of Grade II and Grade III meningiomas were analysed with fluorescence in situ hybridization (FISH) technique with locus specific probes. Types of aberrations and deletions were analysed and correlated with the tumor status.

## Results

There was a statistically significant increase in deletions in recurrences when compared to primary surgeries. The mean mitotic index was higher in patients with deletions. Patients with 18p deletions tended to occur in younger patients and had a significant association with sheeting. 22q deletions were associated with hypercellular tumors. 1p, 14q and 1p14q codeletion had a significant association with mitosis =7.

## Conclusions

This is a first study from India analysing deletions of all these four sites for deletions using FISH technique. Recurrent tumors and tumors with tendency to recur have a higher frequency of deletions. FISH study can be used to predict behaviour of meningioma if significant association is found which needs extensive studies. Further studies in larger sets of patients' along with clinical correlation would help in categorising patients with high risk of recurrence and guide clinical management.

## Learning Objectives

Does Gene expression influence recurrence in Grade II and III meningiomas

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