Accuracy And Utility Of Squash Cytology In Intraoperative Diagnosis Of Central Nervous System Tumors: A Prospective Analysis Of 70 Cases

Shashank Ramdurg[1], Anita Mahanta[2], Sneha Sheelvant[3]

[1]Neurosurgery/ Mr Medical College/ India
[2]Pathology/ Mr Medical College/ India,
[3]Pathology/ Pathology/ India

Purpose
The aim of the study was to analyze cytomorphological features of CNS tumors by squash technique and study the utility and accuracy of squash cytology in these cases.

Materials and methods
All CNS tumors operated at institute from Jan 2016 to Dec 2017 were prospectively analysed. Squash samples were transported in isotonic saline, prepared by crush and spread technique, wet fixed with 95% ethyl alcohol, stained with H&E stain and dried smears with toluidine blue.

Results
70 cases were operated during the period. Age range: 10days-78years. Male to female ratio was 47:23. Location were: Cerebrum-42 cases(61.02%), cerebellum-6 cases(8.47%), CP angle-6 cases(8.475%) and spine 17-cases(22.04%).
All cases underwent squash and histopathological diagnosis. Non neoplastic lesions were 22(31.43%) while neoplastic tumors were 48(68.57%). Hard tumors accounted for 26 cases(37.14%) while soft tissue tumors were 44(62.86%).
Totally 13 cases(18.57%) were misdiagnosed on squash cytology. Discordance was maximum in 8(30.77%) hard tumors and in 5(11.36%) soft tumors. Discordance was in 10(20.83%) neoplastic cases, and in 3(13.63%) non neoplastic cases.
The sensitivity of squash cytology was 81.42%. For neoplastic and non neoplastic lesions it was 79.16% and 86.36% respectively. Sensitivity for soft and hard tumors was 69.23% and 88.63% respectively. Though trend was of more discordance in hard tumors, this was not statistically significant($p>0.05$).

Conclusion
Squash smear cytology is fairly accurate, relatively safe, rapid and simple tool for intraoperative diagnosis of CNS lesions. Though trend was of more towards difficult diagnosis in hard tumors, this however was not statistically significant in our study.