CONCLUSION: High-grade malignant gliomas have a high mortality. Stereotactic biopsy is the gold standard technique to obtain diagnostic information about this kind of tumours but it can be dangerous. New technologies as the magnetic resonance spectroscopy (MRS) are an alternative option. AIM: We suggest the possibility of replacing stereotactic biopsy for new imaging technologies in patients with high-grade malignant gliomas and a very limited life expectancy due to tumoral irresectability, among other factors. We systematically analyze the literature checking the diagnostic accuracy and complications of stereotactic biopsy as well as of new technologies like the MRS. DEVELOPMENT: The average morbidity of stereotactic biopsy is 3.2% and the average mortality is 0.83%. The percentage of cases with a diagnosis (diagnostic yield) is 96%, but accuracy of that diagnosis is 79%. As regards MRS, sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for identifying high-grade gliomas are 89.8, 88.2, 95.3 and 79.7%, respectively. CONCLUSIONS: Stereotactic biopsy presents a quite high morbidity-mortality with a real accuracy diagnostic of 75.8% after considering the diagnostic yield. With regard to MRS, there are very few studies about accuracy diagnostic but, however; there are many about sensitivity, specificity, PPV and NPV, being these last values very high. In spite of that, we cannot conclude that stereotactic biopsy can be substituted for the MRS because there are not enough studies to support this conclusion.

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