

# Asymptomatic meningioma natural history

Information on the natural course of [asymptomatic meningioma](#) is needed to inform clinical management <sup>1)</sup>.

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Sughrue et al. systematically reviewed the natural history of untreated meningiomas.

They identified 22 studies comprising 675 patients who were followed up by serial MRI for a median period of 4.6 years. The authors found that approximately three-quarters of untreated meningiomas 2.5 cm or smaller demonstrated no growth (51%) or grew 10% or less per year (26%). Patients with initial tumor diameters smaller than 2 cm (approximately 2%) rarely demonstrated new or worsening symptoms. Patients with initial tumor diameters of 2–2.5 cm had a marked difference in the rate of symptom progression based on whether their tumors grew more than or less than 10% per year (42% vs 0%). Patients with initial tumor diameters of 2.5–3 cm had new or worsening symptoms 17% of the time. These findings suggest that the majority of tumors smaller than 2.5 cm in diameter will not cause symptoms over the 5-year period following their discovery and that close observation with serial imaging is reasonable in these patients. On the other hand, larger lesions may be considered for early intervention <sup>2)</sup>.

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Among patients older than age 70 years who underwent operation for [asymptomatic meningioma](#), the neurological [morbidity](#) rate was 23.3%; it was 3.5% among younger patients. This indicates that the advisability of surgery in elderly patients with asymptomatic meningiomas must be considered very carefully <sup>3)</sup>.

For the treatment of elderly patients with [asymptomatic meningiomas](#), it is important to determine the [intracranial meningioma natural history](#).

[GKS](#) can control tumors clinically and radiologically with high probability. Although the risk of transient adverse events exists, proactive GKS may be a reasonable treatment option when there are no comorbidities limiting life expectancy <sup>4)</sup>.

In the series of Yano et al., approximately 63% of asymptomatic meningiomas did not exhibit tumor growth, and only 6% of all patients with these lesions experienced symptoms during the observation period. To avoid surgery-related incidences of morbidity in patients with asymptomatic meningiomas, conservative treatment with close follow-up review may be the best therapeutic strategy <sup>5)</sup>.

<sup>1)</sup>

Vernooij MW, Ikram MA, Tanghe HL, Vincent AJ, Hofman A, Krestin GP, Niessen WJ, Breteler MM, van der Lugt A. Incidental findings on brain MRI in the general population. *N Engl J Med*. 2007 Nov 1;357(18):1821-8. PubMed PMID: 17978290.

<sup>2)</sup>

Sughrue ME, Rutkowski MJ, Aranda D, Barani IJ, McDermott MW, Parsa AT: Treatment decision making based on the published natural history and growth rate of small meningiomas. A review and meta-analysis. *J Neurosurg* 113:1036–1042, 2010

<sup>3)</sup>

Kuratsu J, Kochi M, Ushio Y. Incidence and clinical features of asymptomatic meningiomas. J Neurosurg. 2000 May;92(5):766-70. PubMed PMID: 10794289.

4)

Kim KH, Kang SJ, Choi JW, Kong DS, Seol HJ, Nam DH, Lee JI. Clinical and radiological outcomes of proactive Gamma Knife surgery for asymptomatic meningiomas compared with the natural course without intervention. J Neurosurg. 2018 May 18:1-10. doi: 10.3171/2017.12.JNS171943. [Epub ahead of print] PubMed PMID: 29775154.

5)

Yano S, Kuratsu J; Kumamoto Brain Tumor Research Group. Indications for surgery in patients with asymptomatic meningiomas based on an extensive experience. J Neurosurg. 2006 Oct;105(4):538-43. PubMed PMID: 17044555.

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