

Why do meningiomas grow during pregnancy?

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Meningiomas are a common type of benign brain tumor that sometimes grows dramatically in pregnant women. A new study suggests that this sudden tumor growth likely results from "hemodynamic changes" associated with pregnancy, reports the November issue of [Neurosurgery](#), official journal of the Congress of Neurological Surgeons.

The study also identifies some key characteristics associated with rapid growth of meningiomas in pregnant [women](#). The lead author was Dr. Eriks A. Lulis of Washington University School of Medicine, St Louis, Mo.

'Dramatic Growth' of Meningiomas in Pregnant Women

From the records of four university medical centers, the researchers identified 17 women with meningiomas requiring surgery during [pregnancy](#), or shortly afterward. Meningiomas are relatively common, usually benign (noncancerous) tumors that arise in the tissues lining the brain (meninges). They cause problems when they grow large enough to affect brain functions.

Over the years, there have been several reports of meningiomas enlarging or becoming symptomatic during pregnancy. For this reason—and because meningiomas occur more often in women than men—it has sometimes been assumed that rapid [tumor growth](#) is related

to changes in hormone levels during pregnancy. Dr. Lusi and colleagues sought to evaluate this theory, as well as to look at other characteristics of meningiomas in pregnant women.

Surgery for meningioma was successful in 16 of the 17 patients; the remaining patient died before surgery. Most of the women developed meningioma-related symptoms during the third trimester of pregnancy or within eight days after delivery. The most common symptoms of enlarging meningioma were changes in vision and [facial paralysis](#) or other cranial nerve palsies.

Most of the tumors were located in the [skull base](#) region and were typical, "low-grade" [benign tumors](#). At surgery, the tumors showed an unusual "hypervascular" pattern, which was not seen in other cases of meningioma in non-pregnant patients. There was also a high rate of edema (swelling) in and around the tumor.

These and other findings strongly suggested that the rapid tumor growth resulted from "potentially reversible hemodynamic changes"—changes in blood flow—related to pregnancy. The pattern did not support the theory that meningioma growth resulted from "hormone-induced cellular proliferation."

The results may help to explain the uncommon but well-documented occurrence of rapid meningioma growth during pregnancy. Since most meningiomas don't cause any symptoms, they may go undetected. Even if they are detected, they may require no treatment unless they grow.

Together with previous evidence, the findings may have implications for the management of meningiomas in women of child-bearing age. Dr. Lusi and coauthors write, "[F]or the vast majority of women of child bearing age, we would not consider the presence of residual or unresected meningioma to be a contraindication to pregnancy." In

contrast, for patients with evidence of tumor growth or swelling, the authors suggest they might consider treating the tumor before pregnancy.

Provided by Wolters Kluwer Health

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