

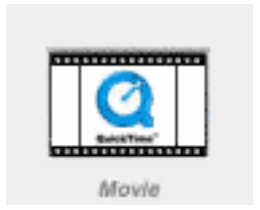


## Introduction

Dissection of brain surface adhesions during recurrent glioma surgery risks injury to the brain and important surface arteries and veins. We present our experience with biocompatible amniotic sac implant to prevent post-op adhesions.

## Methods

Amniotic sac implants were laid on the brain surface after resection of gliomas located in the vicinity of major surface arteries (sylvian fissure) and major veins (parasagittal convexity). Three cases were re-operated on for tumor recurrence.

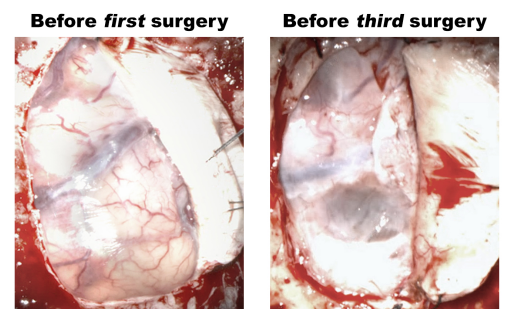


Video showing the fresh-like condition of the brain pial surface months after the first glioma surgery

## Results

In all three cases, a new arachnoid like surface layer was formed. There were no dural adhesions at all. The new formed layer was easy to dissect of major surface arteries and veins like the vein of Trolard shown in the figure below.

### Brain adhesion-free surface even after two operations



The amniotic sac implants created an arachnoid-like layer above the brain pial surface preventing surgical adhesions.

## Discussion

Using the biocompatible amniotic sac implant in glioma surgery allowed us to:

- 1-maintain a fresh-like condition of the brain pial surface even after several surgical treatments
- 2-prevent adhesion formation around major superficial veins
- 3-have a great advantage when operating in the vicinity of the sylvian fissure
- 4-save time by eliminating the need to dissect adhesions
- 5-find the surgical crater right after opening the dura (lack of adhesions covering it)
- 6-prevent inflammatory reactions by the brain pial surface to nylon sutures or other foreign dural reconstruction material

## Conclusions

Amniotic sac implants have a promising role in preventing most surgical brain adhesions and decreases the risks of recurrent glioma surgery. It produced an impressive fresh, new case-like conditions.

## Learning Objectives

Introduce a novel way of preventing more surgical brain adhesions.

Learn a way to decrease the risks of recurrent glioma surgery.

Produce fresh case conditions that can be used in other than glioma surgery.