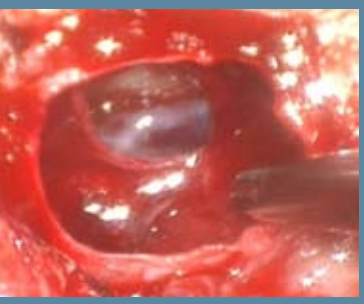
# Reconstruction of the Sellar Dura in Transsphenoidal Surgery

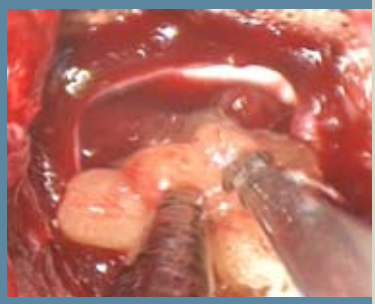
*Edward R. Laws, MD; John A. Jane, Jr., Nader Pouratian, MD; Jonathan H. Sherman, MD — University of Virginia*

## GORE PRECLUDE® MVP® Dura Substitute

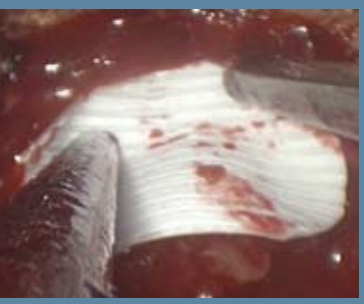
### Intraoperative Images



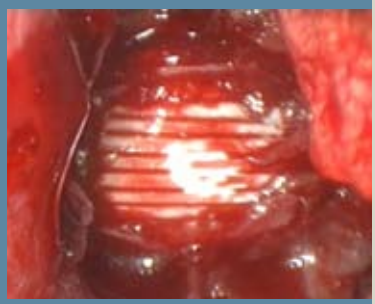
*Initial exposure through aperture in diaphragm*



*Sella is packed with fat graft to fill empty space*



*Intradural closure of the sellar floor with GORE PRECLUDE® MVP ® Dura Substitute*



*Peripheral edges of GORE PRECLUDE® MVP® Dura Substitute are completely tucked under dura to ensure a complete seal*

| | With GORE PRECLUDE® MVP® Dura Substitute | | Without GORE PRECLUDE® MVP® Dura Substitute | |
|---|---|---|---|---|
| **Factor** | **Number** | **Range** | **Number** | **Range** |
| **Total Number of Patients** | 20 | | 20 | |
| Male | 7 | | 10 | |
| Female | 13 | | 10 | |
| **Mean Age (Years)** | 44.2 | 17 – 68 | 49.7 | 15 – 80 |
| **Tumor Type** | | | | |
| Non-functioning | 13 | | 13 | |
| PRL | 1 | | 0 | |
| GH | 1 | | 3 | |
| FSH | 0 | | 1 | |
| Cranio | 1 | | 2 | |
| ACTH | 3 | | 1 | |
| Pluminomonial | 1 | | 0 | |
| **Redo Transsphenoidal** | 3 | | 6 | |
| **Reconstruction** | | | | |
| Nasal Bone | 8 | | 10 | |
| Porex® Plate | 9 | | 7 | |
| MacroPore® Plate | 0 | | 1 | |
| Nothing | 3 | | 2 | |

## Introduction

The role of reconstruction of the sella after transsphenoidal surgery is a matter of some debate, and many techniques have been suggested. We studied the use of a dural substitute, GORE PRECLUDE® MVP® Dura Substitute, as a method for obtaining reliable reconstruction of the sellar dura with the goal of decreasing complications and improving outcome.

## Learning objectives

- Understand principles of sellar surgery
- Understand common complications of transsphenoidal surgery
- Debate merits of sellar reconstruction

## Methods

A prospective alternate case trial was designed wherein 20 patients with pituitary macroadenomas or craniopharyngiomas, half with intra-operative CSF leaks and half without, had the sellar dura closed with GORE PRECLUDE® MVP® Dura Substitute over a fat graft or Gelfoam® absorbable gelatin sponge, respectively. Another 20 patients with the same types of tumor and incidence of introperative CSF leaks were closed using our usual technique (fat graft or Gelfoam® sponge) without reconstruction of the sellar dura. The floor of the sella was reconstructed with bone or cartilage or a Porex® plate in every case. Other aspects of surgical management e.g., steroids and antibiotics, were identical in both groups. Patients were followed periodically on a routine basis and all complications and outcome data were collected according to a prospective protocol. Each patient was reassessed at closure and the operative site and sphenoid sinus were evaluated on 3 month postop MRI studies. Patients were followed clinically on a routine basis and all complications and outcome data were collected according to the prospective protocol.

## Results

There were no instances of postoperative CSF leak, sellar abscess, severe sinusitis, or evidence of foreign body reaction in any case in either arm of the study. There has not yet been an opportunity therefore to examine the histology of the graft post implantation.

## Conclusions

Reconstruction of the sellar dura after transsphenoidal surgery with GORE PRECLUDE® MVP® Dura Substitute provides an adjunctive method form closure which is safe and effective.


AK0070-EN1 FEBRUARY 2006