

Figure 2. Stenosis and mean gradient formation observed with leftward and rightward rotation. Visual display of the percentage of patients with each degree of stenosis severity observed across all cervical levels within each group. Gradients listed are the mean gradients observed across the corresponding cervical levels within each group.

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### A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE ROLE OF INTERVENTION TIMING AND TREATMENT MODALITY IN VISUAL RECOVERY FOLLOWING PITUITARY APOPLEXY

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**Introduction** Pituitary apoplexy has historically been considered an emergent condition that necessitates surgical intervention when there is acute symptomatic onset. This potentially serious condition often occurs in the setting of an underlying adenoma, cystic lesion, or other sellar mass. When these mass lesions hemorrhage within the confined space of the sella turcica, the pituitary gland is subjected to hemorrhagic ischemia. Furthermore, critical neurovasculature in close proximity to the sella can sustain collateral damage. In the present study, we investigate whether early versus delayed surgical intervention (in terms of three timelines: before versus after 48 hours, 72 hours, and 7 days, respectively) results in differences in vision outcomes for patients experiencing pituitary apoplexy with acute onset of neurological and/or neuro-ophthalmic symptoms. Furthermore, we compare the efficacy of surgical decompression versus conservative management of this condition.

**Methods** Accordingly, we queried the PubMed, Scopus, and Embase databases in adherence to PRISMA guidelines. Quantitative meta-analysis was performed according to the Mantel-Haenszel method and forest plots were created using Review Manager v5.4. P-values  $\leq 0.05$  were considered statistically significant.

**Results** Twenty-nine studies remained eligible for review following initial search and screen, including 16 studies relevant to timing of intervention and 15 studies comparing intervention modality. Most patients presented with a visual deficit, and all patients underwent surgery - most commonly via endoscopic endonasal (EEA) approach. Two hundred and twenty patients were included in the sub-analysis for the 7-day cutoff point. Furthermore, 81 patients underwent surgical decompression of the sella prior to 48 hours, and 32 patients underwent surgical decompression between 48–72 hours following presentation. Almost all patients exhibited improved vision post-decompression, including 19/19 patients (100%) in the post-72-hour cohort. On meta-analysis using the Mantel-Haenszel method, there was a significant difference in vision outcomes in favor of patients who underwent surgical decompression before 7 days as compared to after seven days (OR 5.88, 95% CI [1.77, 19.60],  $I^2 = 0\%$ ,  $P < 0.01$ ). In a separate sub-analysis, there was a total of 288 patients across the 15 studies comparing surgical versus conservative management of pituitary apoplexy. These management options proved equivocal on meta-analysis ( $p \geq 0.05$ ).

**Conclusion** In the present study, timing of surgical intervention for pituitary apoplexy was only predictive of visual function recovery at the 7-day timepoint, as has been reported by previous studies. Ultimately, this suggests that pituitary apoplexy is best addressed within the first seven days post-presentation, and that both surgery and conservative management can offer similar outcomes. Management should be patient-specific and dependent upon the severity of symptoms present at onset.

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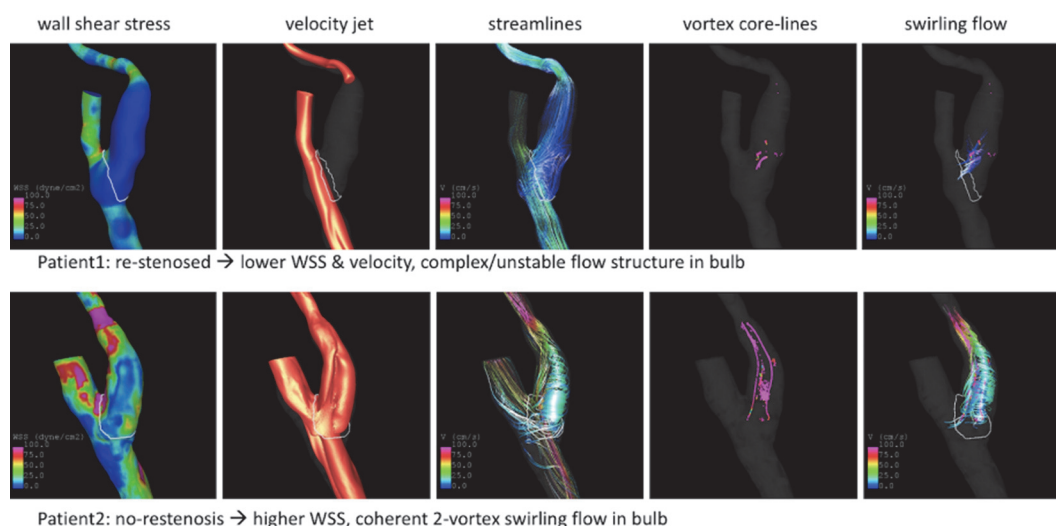
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### HEMODYNAMIC CHANGES AND RESTENOSIS RISK IN CAROTID ENDARTERECTOMY: THE PATCHING DILEMMA

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**Introduction/Purpose** The utilization of patches in carotid endarterectomy (CEA) for the management of carotid artery



Abstract E-224 Figure 1