

# CHOOSING THE CORRIDOR: FAR LATERAL VERSUS RETROSIGMOID APPROACHES TO THE FORAMEN MAGNUM

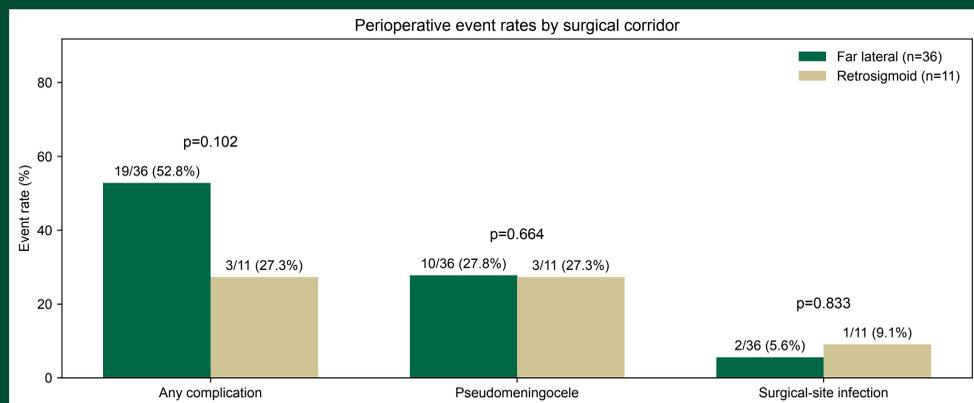
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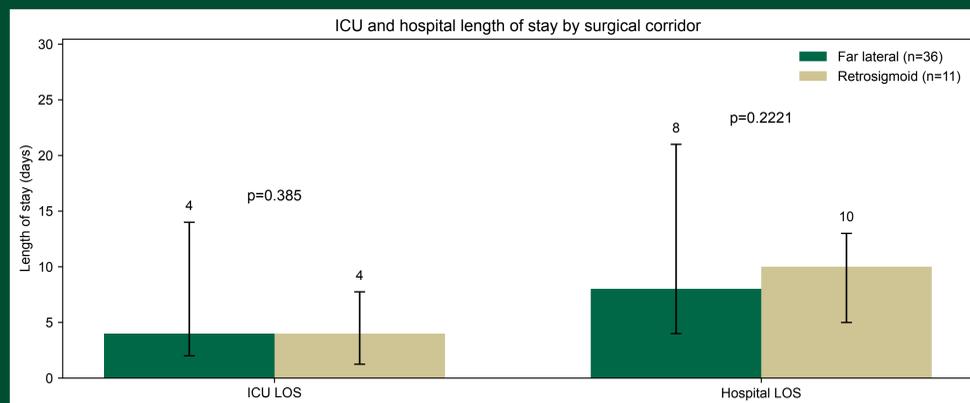
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## Approach and incision are not primary drivers of complication in operations at the level of foramen magnum.



**Figure 1. Perioperative event rates by surgical corridor.** Bar plot comparing any complication, pseudomeningocele, and surgical-site infection after far lateral (n=36) versus retrosigmoid (n=11) approaches. Bars are annotated with n/N (%). P-values shown above each outcome are from the study's univariate association testing for surgical approach (chi-square).



**Figure 2. Bar plot comparing ICU length of stay (LOS) and hospital LOS.** Bars represent median length of stay; error bars denote the IQR. P-values shown above each outcome correspond to univariate testing (Kruskal-Wallis)

## INTRODUCTION

- Selecting an **approach to the skull base requires balancing exposure against morbidity.**
- We aimed to compare differences in outcomes between the far-lateral and retrosigmoid approaches to the foramen magnum.

## METHODS

1. Retrospective, multicenter study of 47 consecutive cases managed with **far-lateral or retrosigmoid approaches** by skull-base specialists.
2. Inclusion required operative note description and independent screening by neurosurgeon to confirm lesion anatomy and pathology.
3. Outcomes included operative time, length of stay (LOS), overall complications, pseudomenigocele formation, surgical site infection (SSI), and discharge disposition.
4. Statistical analyses included Mann-Whitney U or t-tests, chi-square or Fisher exact tests, univariate correlations using Spearman's rank correlation, and multivariate logistic regression **adjusted for approach and lesion characteristics.**

## RESULTS

- After adjustment for lesion characteristics, **approach and incision type were not independent predictors** of overall complications, pseudomeningocele, SSI, ICU LOS, or hospital LOS (all p>0.05).

## Patient characteristics and perioperative outcomes by surgical corridor

Characteristic	Far lateral (n=36)	Retrosigmoid (n=11)
Age, years	59.8 ± 13.4	50.5 ± 21.3
Female sex	22/36 (61.1%)	7/11 (63.6%)
Histology: Meningioma	18/36 (50.0%)	4/11 (36.4%)
Histology: Schwannoma	5/36 (13.9%)	3/11 (27.3%)
Histology: Aneurysm	8/36 (22.2%)	0/11 (0.0%)
ICU LOS, days	4 (2–14)	4 (1–8)
Hospital LOS, days	8 (4–21)	10 (5–13)
Any complication	19/36 (52.8%)	3/11 (27.3%)
Pseudomeningocele	10/36 (27.8%)	3/11 (27.3%)
Surgical-site infection	2/36 (5.6%)	1/11 (9.1%)
Discharge disposition: Home	16/36 (44.4%)	6/11 (54.5%)
Discharge disposition: Other than home	18/36 (50.0%)	5/11 (45.5%)

Table 1. Baseline demographics, lesion histology, length of stay (LOS), and perioperative outcomes. Continuous variables are reported as mean ± SD (age) or median (IQR) (ICU and hospital length of stay). Categorical variables are reported as n/N (%). Discharge disposition is grouped as home versus other than home.

## DISCUSSION

- Limitations: small sample size and group imbalance,
- These findings **support an approach tailored to lesion anatomy and pathology** without an inherent perioperative penalty in outcome.