

# Intranasal Fiberoptic Intubation Approach in a Patient with Klippel-Feil Syndrome: A Case Report

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## INTRODUCTION

- Klippel-Feil Syndrome (KFS) is a rare congenital disorder in which two or more cervical vertebrae are fused together.
- KFS patients frequently have a short neck, a low posterior hairline, and limited flexibility of the neck and upper body, resulting in difficult airways, and creating a challenging intubation for the anesthesia team (1).
- Cases describing awake nasal fiberoptic intubation in KFS patients can be found as early as 1988 (2), but the nasal approach is often underutilized.

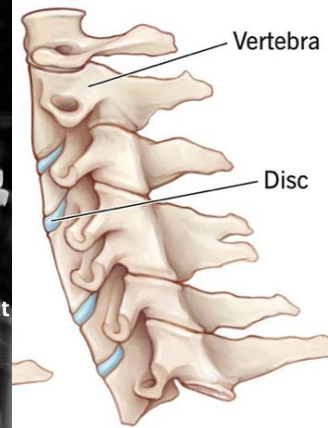
**Our case involved successful intubation via this unique approach in a patient with a difficult airway due to KFS anomalies.**

## CASE PRESENTATION

- 67 year old male with a past medical history of KFS and prior difficult intubation who presented with cancer of the descending colon requiring left colectomy.
- Prior imaging (Figure 1) showed severe congenital cervical fusion of the C2-C4 and C4-C7 vertebral bodies.



Figure 1. Pt's lateral x-ray showing severe congenital cervical fusion



*Klippel-Feil syndrome*

Figure 2. Illustration of cervical fusion in KFS (3)

- Physical Exam: Mallampati III, TM distance <3 FB, neck ROM limited.
- The patient received nebulized lidocaine via face mask, topical lidocaine in the nares, and lidocaine solution to gargle.
- Additional pretreatment with oxymetazoline and IV glycopyrrolate were utilized to minimize secretions.
- 28, 30, 32 French trumpets used for nasal dilation.

**The patient successfully underwent intranasal awake fiberoptic intubation with #6 ETT.**

- The attending anesthesiologist and pediatric anesthesiologist were in charge during the induction period with the otolaryngology team on standby during the procedure.

## DISCUSSION

- Thorough preoperative assessment, planning, and preparation are vital for successful airway management in patients with KFS.

**Our case emphasizes that awake intranasal fiberoptic intubation is safe, effective and should be considered when severe congenital cervical fusion is present.**

## REFERENCES

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