

LETTER TO THE EDITOR

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# General anesthetic management for dental surgery in an adult patient with Rubinstein-Taybi syndrome

Atsushi Kotera<sup>1\*</sup>

## To the Editor

Rubinstein-Taybi syndrome (RTS) is a rare genetic disorder [1], and the incidence is approximately 1/100,000 [2]. Its most notable feature is facial dysmorphism, e.g., widely spaced eyes, a beak-shaped nose, and micrognathia [3], and difficult airway management is challenging [4]. I present the general anesthetic management for dental surgery in a patient with RTS.

A 31-year-old female (body weight, 50 kg; height, 139 cm) was scheduled for dental surgery under general anesthesia. She was diagnosed with RTS at birth and presented typical characteristic for RTS, including mental retardation, short stature, widely spaced eyes, a beak-shaped nose, and broad thumbs (Fig. 1A, B). She was hospitalized for aspiration pneumonia at 26 and 28 years, and severe carious teeth were detected. Her respiratory condition was normal with peripheral oxygen saturation of 96% in room air. Cervical X-ray showed no choanal atresia (Fig. 1C), but brain CT demonstrated a nasal septum deviation (Fig. 1D).

Oral premedication with 10 mg diazepam was administered. General anesthesia was induced with 3 mg midazolam, 50 µg fentanyl, and 40 mg propofol in the reverse Trendelenburg position. Face mask ventilation was confirmed to be possible before administering 30 mg rocuronium. Oral intubation was tried with a conventional laryngoscope. Tonsillar hypertrophy was observed, but

the laryngoscopic view was defined as Cormack and Lehane grade II-b by using the Burp maneuver, and an ID 6.5-mm cuffed tracheal tube was inserted. Both nasal cavities were disinfected carefully, and an ID 6.0-mm cuffed tracheal tube was inserted through the left nostril with a video laryngoscope. General anesthesia was maintained with 4–5 mg/kg/h propofol and 0.15–0.2 µg/kg/min remifentanyl, and 6 µg/kg fentanyl was administered. Her intraoperative respiratory condition was stable with peripheral oxygen saturation of 98% on 35% oxygen. For antiemesis, 6.6 mg dexamethasone and 4 mg ondansetron were given. The surgical duration was 149 min, and the tracheal tube was removed after confirming that the ratio of train-of-four showed >0.9, and she was discharged on the next day uneventfully.

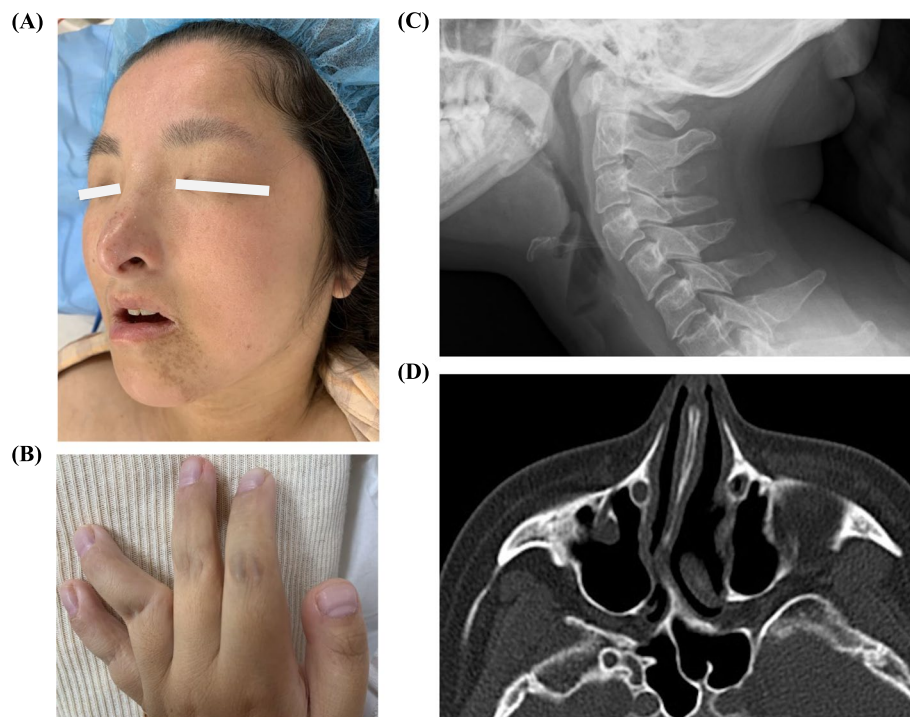
In this present case, nasal intubation was predicted to be difficult because of a nasal septum deviation, but oral intubation was thought to be enforceable because of unremarkable micrognathia. Therefore, oral intubation prior to nasal intubation was selected. That was noted in a pediatric patient with RTS [5], and it insured enough time for disinfection of both nasal cavities, confirmation of the passage of each nasal cavity, and decision of tracheal tube size. Furthermore, nasal trauma could be avoided.

In a patient with RTS, a recurrent respiratory infection following dysphagia or gastroesophageal reflux is also remarkable. Attention should thus be paid to reduce the risk of aspiration or vomiting. In this present case, the reverse Trendelenburg position during the induction of general anesthesia, selection of intravenous anesthetics, and prophylactic administration of antiemetics were undergone. But, as in the other

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**Fig. 1** Surface appearance and radiographic images of the patient with Rubinstein-Taybi syndrome. **A** Slanting, widely spaced eyes and a beak-shaped nose but not remarkable micrognathia. **B** A broad thumb and a bended ring finger in the left hand. **C** Non-choanal atresia and airway narrowing in cervical X-ray. **D** Remarkably deviated nasal septum in brain CT

literatures [5–7], H<sub>2</sub>-antagonist should have been administered as premedication.

In conclusion, in a patient with RTS, careful anesthetic planning is necessary to achieve successful airway management and to prevent respiratory complications.

#### Abbreviation

RTS Rubinstein-Taybi syndrome

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#### Author's contributions

AK participated in the anesthetic and perioperative management, wrote the manuscript, and approved the final manuscript.

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#### Availability of data and materials

The datasets for the reported patient are available from the corresponding author on reasonable request.

#### Declarations

##### Ethics approval and consent to participate.

Not applicable.

#### Consent for publication

Informed consent was obtained from the patient's family for the publication of this case report and any accompanying images.

#### Competing interests

The author declares no competing interests.

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#### References

- Petrij F, Dauwerse HG, Blough RI, Giles RH, van der Smagt JJ, Wallerstein R, et al. Diagnostic analysis of the Rubinstein-Taybi syndrome: five cosmids should be used for microdeletion detection and low number of protein truncating mutations. *J Med Genet.* 2000;37:168–76.
- Hennekam RC, Stevens CA, Van de Kamp JJ. Etiology and recurrence risk in Rubinstein-Taybi syndrome. *Am J Med Genet Suppl.* 1990;6:56–64.
- Darlong V, Pandey R, Garg R, Pahwa D. Perioperative management of a patient of Rubinstein-Taybi syndrome with ovarian cyst for laparotomy. *J Anaesthesiol Clin Pharmacol.* 2014;30:422–4.
- Patel SM, Hakim M, Krishna SG, Tobias JD. Anesthetic implications in Rubinstein-Taybi syndrome. *J Med Cases.* 2015;6(11):534–6.
- Au Yong PS, Evangeline Lim HL. Anesthetic management of an Asian pediatric patient with Rubinstein-Taybi syndrome for dental surgery. *J Med cases.* 2020;11:148–51.
- Twigg SJ, Cook TM. Anaesthesia in an adult with Rubinstein-Taybi syndrome using the proseal laryngeal mask airway. *Br J Anaesth.* 2002;89:786–7.
- Park CH, Park KH, Choi BY. Management of anesthesia for Rubinstein-Taybi syndrome. *Korean J Anesthesiol.* 2012;63:571–2.

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