TITLE: CONSEQUENCES OF PROLONGED ENDOTRACHEAL INTUBATION ON THE SWALLOWING REFLEX

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The reflex closure of the glottis is a major protective mechanism against aspiration. Laryngeal sensibility is altered in extubated patients following prolonged intubation.[1] The aim of this study was to assess the swallowing reflex in this situation.

Thirty patients divided into 2 groups were studied. Group I consisted of 15 patients (62.4±15 years) mechanically ventilated for more than 24 h who did not receive sedative agents for at least 24 hr before extubation. Group II was the control group and contained 15 patients (63.1±16.7 years) who had not been intubated. All patients in both groups had a naso-gastric tube. Informed consent was obtained and the protocol was approved by the local Ethics Committee. A catheter placed 8 cm from the nares to the epipharynx was used for instillation of isotonic sodium chloride. Swallows were identified by a submental electromyogram. The latency between injection and the first swallowing response was used as an index of swallowing reflex efficiency. In each subject, 4 different volumes (0.25, 0.5, 0.75 and 1 ml) were injected in a randomized sequence at interval of 30 s. In group I, latency measurements were recorded immediately after extubation (Eo) and at 1 (E1), 8 (E8), 24 (E24), and 48 hours (E48) after extubation. A single set of measurements was performed in the control group (Ec). Student's paired t test and analysis of variance were used for statistical analysis.

A significant increase in swallowing latency was observed throughout the study in group I when compared with control (Table). Swallowing impairment remained unchanged over the 48 hours following extubation. No correlation was noticed between latency impairment and either duration of intubation or advance of age in group I.

Our data demonstrate a significant impairment in swallowing in the first 48 hours following prolonged intubation. This phenomenon could explain microinhalations and aspirations observed after extubation.

Table. Latency (s) (mean±SEM) * p < 0.05 vs Ec

ml	EO	E8	E24	E48	EC
0.25	5.3* ±1.4	4.5* ±1.4	5.0* ±1.3	4.8* ±1.4	1.6 ±0.4
0.50	3.8* ±1.2	4.0* ±1.3	1.7* ±0.5	2.7* ±1.1	1.0 ±0.2
0.75	2.8* ±1.0	3.4* ±1.4	2.3* ±1.1	2.4* ±1.1	0.7 ±0.1
1	2.4* ±1.0	2.1* ±1.0	1.5* ±0.8	1.9* ±1.1	0.8 ±0.2

References
1. Anesth Analg 63:335-342, 1984

TITLE : INCIDENCE OF MAXILLARY SINUSITIS IN RECENTLY INTUBATED CRITICALLY ILL PATIENTS

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INTRODUCTION :

Although maxillary sinusitis is a well known complication of prolonged nasotracheal intubation, its incidence in recently intubated patients has not been firmly established nor the potential role of nasogastric tube in patients with orotracheal intubation.

METHODS :

Between July 1989 and March 1990, 56 recently intubated patients were enrolled in a prospective study after informed consent and institutional approval had been obtained. Within 24 hours following their admission to the SICU for postoperative complications, all had a paranasal CT scan to visualize sinus cavities. Maxillary sinusitis was radiologically defined as the presence of an air fluid level opacity within the maxillary sinus in the supine position. When present, transnasal puncture was performed under general anesthesia and the content of the maxillary sinus was bacteriologically examined.

RESULTS :

1) As shown in the table, maxillary sinusitis was absent in 19 patients and present in 37 patients. The association between nasotracheal intubation and maxillary sinusitis was highly significant (chi square test, $p < 0.01$).

2) In patients with orotracheal intubation and nasogastric tube (n = 19),the incidence of maxillary sinusitis increased with time. This was not true for patients with orotracheal intubation and orogastric tube (n = 14).

3) Thirty six bacteriological examinations were performed in the 37 patients with maxillary sinusitis. In 29 patients, sinus cultures were positive with a large predominance of gram negative bacterias (46 %).

CONCLUSION :

This study shows 1) that maxillary sinusitis is present in 66 % of critically ill patients recently intubated 2) that nasotracheal intubation is the main predisposing factor and 3) that the presence of a nasogastric tube in orally intubated patients also favors the developpment of maxillary sinusitis.

* p < 0.01	SINUSITIS PRESENT	SINUSITIS ABSENT
OROTRACHEAL INTUBATION	17	16
NASOTRACHEAL INTUBATION	20	3 *