

LETTER

Postoperative Monitoring Following Jaw Surgery Is Essential

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Though there are no available statistics, about 5,000 cosmetic jaw operations seem to be performed yearly in South Korea [1]. The frequency of jaw surgery is increasing in South Korea and in the United States. Recently, serious complications, including mortality, have been reported in the mass media.

An editorial of a Korean daily newspaper insisted that the Korean Medical Association and the authorities have a certification system, which includes regulation that hospitals and clinics, with expertise and proficiency only, can perform jaw surgery and regulate unwaranted advertisement for surgery.

In the literature, 32% to 52% of the patients who underwent jaw surgery had sensory disturbances and 17% had respiratory disturbances [2,3]. No cases of mortality have been reported in any scientific papers; however, articles on cases of mortality due to jaw surgery have been found in several newspapers (Appendix 1).

We searched for mortality cases after jaw surgery via an internet search. The search keywords were: orthognathic, maxillofacial, jaw, surgery, die, death, and mortality. Among 5,000 cases, there were 20 cases (0.4%) of serious complications after jaw surgery. We found 17 cases of mortality and 3 cases of patients in a vegetative state after jaw surgery. Among the 20 cases of serious complications, 15 (75%) were caused by airway obstruction, followed by 3 (15%) caused by bleeding, 1 (5%) caused by hypotension, and 1 of unknown cause (Tables 1, 2).

Respiratory insufficiency after jaw surgery is due to airway obstruction that results from edema of the respiratory tract. Because the upper jaw and lower jaw are fixed by intermaxillary fixation after jaw surgery, the patients cannot expectorate sputum easily. Jaw surgery for prognathia has a risk of negative pressure pulmonary edema because it makes a patient's upper airway space narrower by moving the lower jaw backwards. Bleeding and swelling in the oral cavity also make the airway space narrower. In addition, oozing from the wound sometimes irritates the patient's larynx and might initiate laryngospasm [4,5].

In order to maintain a patent airway, the following standards should be met: 1) Pulse oximeter is essential. Oxygen saturation decreases 1 minute after airway obstruction. Therefore, immediate treatment is needed when a decrease in oxygen saturation is observed. 2) Capnography, the monitoring of the concentration or partial pressure of carbon dioxide (CO₂) in the respiratory gases, may be very effective. It is direct monitoring of the exhaled concentration of CO₂. A sudden drop in the CO₂ level during the postoperative period can be detected. 3) Fully equipped and readily available suction, epinephrine spray, intubation, and tracheostomy sets should be prepared at the bedside.

Table 1. The mortality cases in the mass media

No.	Date	Media	Hospital	No. of mortality	Reason
1	2012-08-06	Chosun.com	Dentistry	1	Airway obstruction
2	2011-11-08	Segye.com	Unknown	3	Vegetative state/airway obstruction
3	2011-09-23	Health Korea News	Unknown	1	Airway obstruction
4	2011-09-05	F Today	Dentistry	1	Airway obstruction
5	2011-07-15	Money Today	Unknown	1	Airway obstruction
6	2011-06-23	Donga.com	Unknown	1	Bleeding
7	2011-06-03	Joongang.com	Unknown	2	Airway obstruction/bleeding
8	2011-05-26	Hankooki.com	Unknown	1	Bleeding
9	2011-01-24	KBS	Unknown	1	Airway obstruction
10	2010-12-29	Munhwa.com	Dentistry	1	Airway obstruction
11	2008-05-02	SBS	Plastic surgery	1	Airway obstruction
12	2008-05-01	MBN	Plastic surgery	1	Hypotension
13	2008-02-04	Donga.com	Plastic surgery	3	Unknown/airway obstruction/heart failure
14	2007-12-10	Daejonilbo	Dentistry	1	Airway obstruction
15	2005-10-07	Hani.co.kr	Unknown	1	Vegetative state
Total				20	

Table 2. Causes of death following jaw surgeries

Cause of death	Cases
Airway obstruction/heart failure	15
Bleeding	3
Hypotension	1
Unknown	1
Total	20

A mildly humid atmosphere should be kept. 4) Surgeons or anesthesiologists should be present at all times.

In a hypoxic state, the following standards should be met: 1) Check whether the patient is breathing well or not. 2) Encourage deep breathing. 3) Give oxygen at 3 to 5 L per minutes via a mask. 4) If oxygen saturation drops below 80%, insert a nasal airway. 5) If cyanosis or tachycardia appears, remove the intermaxillary fixation and perform intubation. 6) If intubation fails or bradycardia appears, carry out tracheostomy immediately.

▪ Appendix 1 ▪

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