

# The Truview EVO2™: Initial clinical evaluation of a new optical laryngoscope system

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## Background and Goal of Study:

The availability of different laryngoscope blades loaded with optic devices improves the view of glottic structures during tracheal intubation (1). Truview EVO2™ optical laryngoscope system (Truphatek®, Netanya, Israel) is a Macintosh-type blade with an optical lens attached, providing the image of the glottis near the tip of the laryngoscope blade (2).

The aim of this randomized, prospective trial was to investigate the intubation conditions and intubation time of Truview EVO2™ system, and compare them with the Macintosh blade in patients with estimated normal airway.

## Material and Methods:

With IRB approval and informed consent 75 ASA I-II adult patients were allocated to two groups at random via sealed envelope technique. Thyromental distance, hyomental distance, maximal voluntary mouth opening distance were recorded and upper lip bite test and Mallampati tests were performed before the initiation of general anesthesia.

Laryngoscopy was performed twice in random order once first using a regular Macintosh 3 blade (Group M [n=38]) and once first using a Truview EVO2™ blade (Group T [n=37]). Cormack and Lehane score was used to assess the laryngeal view during intubation. The laryngoscopy time was recorded consecutively for both blades. The ease of laryngoscopy score was assessed via verbal rating score from 0 (easy) to 100 (difficult). Mann-Whitney U and Chi-Square test were used and  $p < 0.05$  was considered as significant. Values are expressed as median and quartiles.

## Results:

Patients characteristics and demographic data were similar among groups. The study parameters among groups were comparable for the same type blades. The Median Cormack-Lehane score with Macintosh blade (2, 1-2) was higher than Truview EVO2™ (1, 1-1) ( $p=0.023$ ). The laryngoscopy time for Macintosh blade (13.8, 11.6-16.7 sec) was comparable with Truview EVO2™ (13.5, 11-16 sec) ( $p=0.73$ ). The ease of laryngoscopy score was better with Truview EVO2™ (10, 10-15) compared to Macintosh blade (30, 10-50) ( $p=0.30$ ).

## Conclusion:

Truview EVO2™ system compared to Macintosh blade provides better glottic view and laryngoscopy conditions with comparable laryngoscopy times.

Table 1. Patient demographics.

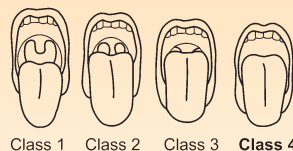
	Group M (n=38)	Group T (n=37)	p	All patients (n=75)
Age (year)	50±17	47±14	NS	48±13
Gender (F/M)	20/18	16/21	NS	36/39
Weight (kg)	71±12	75±18	NS	72±19
Height (cm)	168±23	174±20	NS	171±26
Body mass index (kg. m <sup>-2</sup> )	25±6	24±5	NS	24±6
Neck Extension (>80°/≤80°)	35/3	34/3	NS	69/6
Maximal voluntary mouth opening (cm)	5.3±1.1	4.75±0.65	NS	5.03±0.91
Thyromental Distance (cm)	9.9±1.13	9.6±1.16	NS	9.75±1.12
Hyomental Distance (cm)	6.2±1.2	6.3±1	NS	6.2±0.9
Upper lip bite test (Class I/II/III)	28/5/5	27/5/5	NS	55/10/10
Mallampati score (I/II/III/IV)	13/13/7/5	12/12/8/5	NS	25/25/15/10

Group M: Intubation with first Macintosh Blade, Group T: Intubation with first Truview EVO2 system, All patients: All patients enrolled to the study, NS:  $p > 0.05$ , Statistically not significant between groups, Upper lip bite test: Class I: Lower incisors can bite the upper lip above the vermillion line, Class II: Lower incisors can bite the upper lip below the vermillion line and Class III: Lower incisors cannot bite the upper lip.

Table 2. Intubation characteristics of the Macintosh blade and Truview EVO2 system.

	Macintosh Blade (n=75)	Truview EVO2 System (n=75)	p
Cormack Lehane Score (I/II/III/IV) (n)	25/35/15/0	60/10/5/0	<b>0.001</b>
Median Cormack Lehane Score (1-4)	2, (1-2)	1, (1-1)	<b>0.023</b>
Laryngeal manipulation during intubation (+/-) (n)	55/20	5/70	<b>0.001</b>
Neck extension during intubation (+/-)(n)	60/15	10/65	<b>0.001</b>
Ease of intubation (0, easy-100, difficult)	30, (10-50)	10, (10-15)	<b>0.003</b>
The laryngoscopy time (sec)	13.8, (11.6-16.7)	13.5, (11-16)	NS

Macintosh Blade: Intubation with Macintosh blade, Truview EVO2 System: Intubation with Truview EVO2 system, p: Statistical significance, NS:  $p > 0.05$ , Statistically not significant, Mann Whitney U Test, Chi square test.



## References:

- Anesthesiology 2003; 98: 1269-77
- Matsumoto S. et al. Anesth Analg 2006; 103: 492