

THE SCIENTIFIC ACTIVITIES OF THE
DEPARTMENT OF ANESTHESIOLOGY
OF AUB AT THE 14TH WORLD CONGRESS
OF ANAESTHESIOLOGISTS,
CAPE TOWN-SOUTH AFRICA

2nd – 7th March, 2008

A – A Presentation On Carcinoid Disease And Anesthesia

..... *Anis Baraka*

B – POSTER-FACILITATION OF TRACHEAL INTUBATION USING THE
GLIDESCOPE AND THE METTI INTRODUCER

..... *Musa Muallem*

A. - CARCINOID DISEASE AND ANESTHESIA*

ANIS BARAKA**

Carcinoid tumors arise from neurochromaffine cells interspersed with the gastrointestinal tract and throughout the body. Over 75% of carcinoid tumors originate in the gastrointestinal tract. The lung is the commonest non-gut site.

Carcinoid syndrome is a variable collection of signs and symptoms associated with the release of amines and peptides by the primary carcinoid tumor or by the liver metastasis. Serotonin is the most common secretory product. It is produced from tryptophan by hydroxylation and decarboxylation. Adrenergic stimulation causes its release into the circulation, where it is broken down to 5-hydroxy indole acetic acid (5-HIAA). Urinary testing for 5-HIAA is used for diagnosis and to monitor disease progress (Fig. 1).

The presence of a carcinoid tumor in a patient presents no specific problems to the anesthesiologist unless it causes symptoms due either to its physical presence or to the secretion of mediators such as amines and peptides that reach the systemic circulation. The liver is extremely efficient at metabolizing vasoactive peptides released into the portal vein. Therefore, less than 7% of carcinoid tumor carriers develop the syndrome.

Carcinoid syndrome is seen either when the primary tumor, or a metastatic deposit, secretes its mediators directly into the systemic circulation, or when output of vasoactive substances overwhelms ability of liver and lungs to inactivate substances.

Manifestations of the carcinoid syndrome include the “classic” triad of cutaneous flushing (Fig. 2), diarrhea, bronchospasm and heart disease.

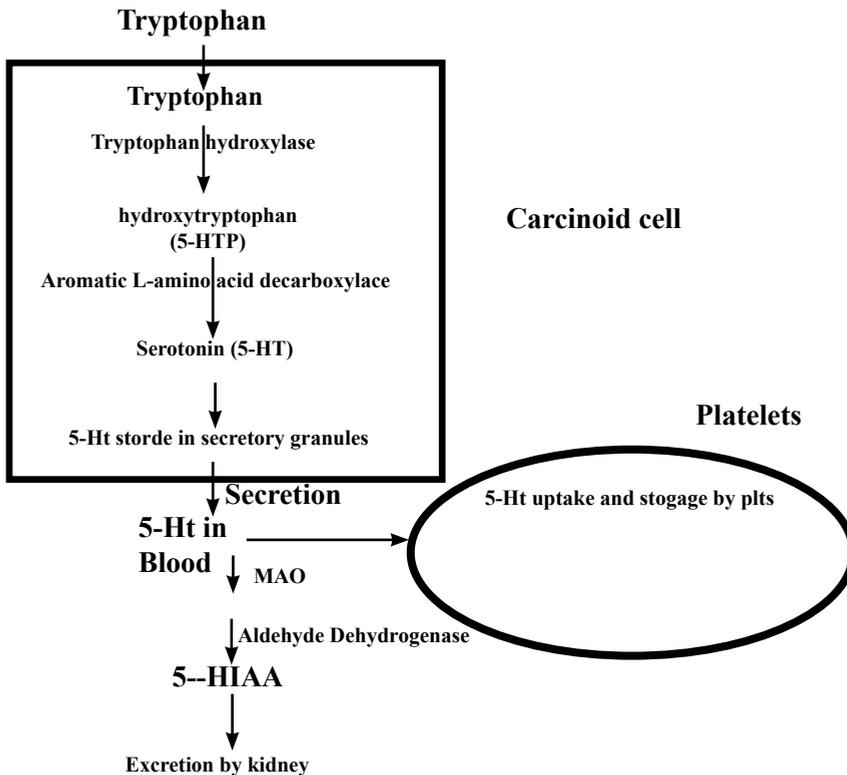
* Presented in the Endocrine Session of the Scientific Program of the 14th WCA. Cape Town, South Africa 2nd 7th March 2008.

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Flushing is the most common sign (84%) and diarrhea is the most commonly occurring symptom (70%). Cardiac involvement; endocardial fibrosis can cause valvular heart disease, usually affecting the tricuspid insufficiency and pulmonary stenosis.

Fig. 1

Metabolism of Tryptophan into serotonin (5-HT)



Treatment of the primary carcinoid tumor is surgical resection while the treatment of carcinoid syndrome is palliative. However, hepatic metastases are often excised and reductions of tumor masses improve symptoms. Surgery is also indicated for correction of valvular heart lesions and for the palliative treatment of intestinal obstruction secondary to the carcinoid tumor.

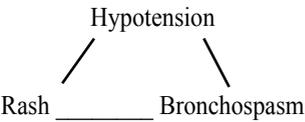
Preoperative therapy is aimed at optimization of the patient for surgery by relief of carcinoid symptoms and correction of fluid and electrolyte abnormalities secondary to diarrhea. Octreotide, a synthetic analogue of somatostatin, is a potent inhibitor of hormone secretion by the carcinoid cells. Indeed, this agent has proved invaluable in the preoperative preparation of the patient, induction of anesthesia as well as during the perioperative period to treat bronchospasm, and fluctuations of blood pressure.

The key to successful anesthetic management is preoperative optimization of the patient. Octreotide is mostly used to control symptoms and to treat the acute crisis. Anesthetic techniques aim to minimize carcinoid mediators release during induction, intubation as well as manipulation of the tumor. Anesthetic considerations in patients with carcinoid tumor are to prevent the release of mediators and perioperative carcinoid crisis. The anesthesiologist should avoid anxiety, hypercapnia, hypothermia, and hypotension, which release catecholamines and trigger carcinoid mediators. Also, drugs that release histamine as sympathomimetic drugs should be avoided (Table 1).

Fig. 2
Facial flushing in a patient having carcinoid disease



Table 1
Carcinoid Disease and Anaesthesia

PHEOCHROMOCYTOMA	CARCINOID DISEASE
Rare disease 0.1% of the hypertensive population	1:100,000
<p style="text-align: center;">Undiagnosed</p> <p style="text-align: center;">Intra-operative Mortality up to 80%</p> <p style="text-align: center;">Adrenergic Crisis</p> <p style="text-align: center;">Tachycardia & Hypertension</p> <p style="text-align: center;">Simulate Hypertension</p> <p style="text-align: center;">Wrong treatment by beta blockers</p>	<p style="text-align: center;">Undiagnosed</p> <p style="text-align: center;">Very high mortality</p> <p style="text-align: center;">Carcinoid Crisis</p> <div style="text-align: center;"> <p>Hypotension</p>  </div> <p style="text-align: center;">Simulate anaphylactic reaction</p> <p style="text-align: center;">Wrong treatment by catecholamines</p>
THE DIAGNOSED SECRET OF OPERATIVE SUCCESS	
<ul style="list-style-type: none"> ● Adequate pre-operative preparation ● Tyrosine Hydroxylase inhibitors (TH is the rate limiting step) ● Block the action of mediators <p style="text-align: center;">Anti-adrenergic α – blockers β - blockers</p>	<ul style="list-style-type: none"> ● Adequate pre-operative preparation ● Octreotide therapy ● Block the action of mediators <p style="text-align: center;">Anti-serotonin Anti-histaminics Aprotonin</p>

B. POSTER-FACILITATION OF TRACHEAL INTOBATION USING THE GLIDESCOPE AND THE METTI INTRODUCER

MUSA MUALLEM*

Facilitation of tracheal intubation using the GlideScope by a pipe stylet and endotracheal tube introducer assembly



Musa Muallem MD, Anis Baraka MD,
American University of Beirut - Beirut - Lebanon



BACKGROUND AND GOAL OF STUDY

The GlideScope is a new tool for intubation with some limitations during advancement of the endotracheal tube towards the glottis.¹ Guides on whom the endotracheal tube is railroaded into the trachea have been recommended. The goal of the study is to use a pipe stylet-endotracheal tube introducer assembly, in order to facilitate tracheal intubation by the GlideScope in difficult airway

MATERIALS AND METHOD

The GlideScope, (Verathon Medical USA), was used for intubation, combined with an assembly of curved metal pipe stylet-MPS and endotracheal tube introducer -METTI. (VBM Sulz Germany). In 12 patients, in whom, direct laryngoscopy with the Macintosh blade, showed a glottic view of Cormack III or IV. A good view of the larynx was obtained with the GlideScope. When the glottis was visualized, the pipe stylet-introducer (size 12)- assembly was introduced into the pharynx. The introducer was then advanced within the pipe stylet to target the glottis, into the trachea. The pipe stylet was withdrawn, and the endotracheal tube was railroaded over the introducer into the trachea.

RESULTS & DISCUSSION

Using the above technique, we were able to intubate all 12 patients. The GlideScope gave a better view of the larynx than direct laryngoscopy. However, good view does not always correlate with successful intubation. The addition of pipe stylet-endotracheal tube introducer assembly to the Glidescope have increased the chances of successful intubation

CONCLUSION

An assembly of pipe stylet and endotracheal tube introducer could facilitate tracheal intubation with the GlideScope in the difficult airway.

REFERENCES

- 1 Muallem M, Baraka A. *Tracheal intubation using the GlideScope with a combined curved pipe stylet, and endotracheal tube introducer* *Can J Anesthesia*, 54(1); 77-78 2007

Aids for Difficult Intubation

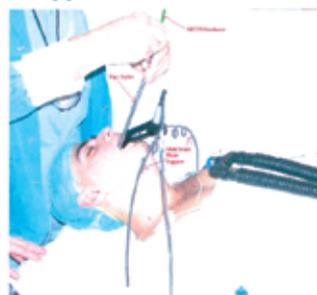
1. **Stylets** to perform ETT
PipeStylet and Introducer combined(Muallem-MPS)
2. **Introducers**, Boogie, Guides (METTI) ,(railroadng)
3. **Special Laryngoscopes** McCoy
4. **Fiberscopes**
Flexible (Acts like an Introducer)
Rigid – Bonfils (Acts like a stylet)
5. **LMA** - Fastrach , IMA
6. **Video assisted scopes;**
Bullard,UpsherScope,
C Track,Airtraq, McGrath, Storz
GlideScope,



GlideScope Support



Glide-Scope



GlideScope with Hook & Support

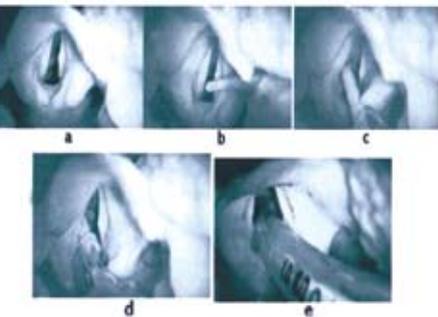
* Poster presented in the 14th WCA, Cape Town, South Africa. 2nd 7th March 2008.



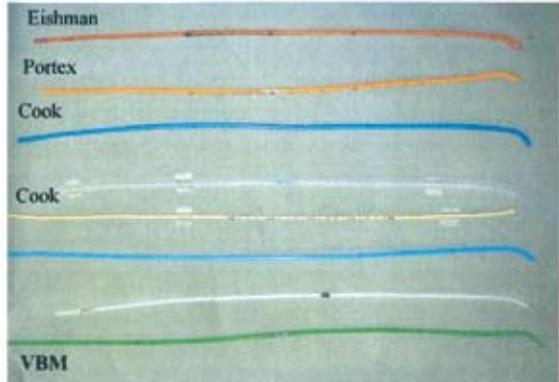
Providing a good view of the glottis
Does not always correlate with successful
Tracheal intubation



METTI within a Pipe Stylet
The two make one device where each can
Be maneuvered independently
The pipe stylet to curve E.T .Tube or introducer and
METTI to guide tube into trachea



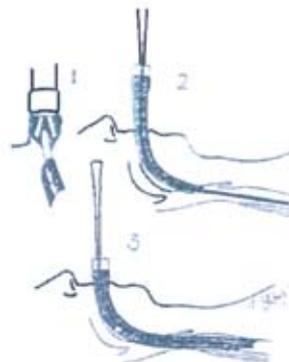
**ET Tube Introducers
Available on the market**



**Sir Robert Macintosh
British Medical Journal 1949; 1:28**

AN AID TO ORAL INTUBATION

Dr. R. R. MACINTOSH, *Nuffield Professor of Anaesthetics, Oxford.*
writes : During the past two years I have been experimenting with large
bore oral endotracheal tubes of different shapes. One of the difficulties in
passing tubes beyond a certain size is that *the body of the tube obscure*



the view of the cords
through which the tip
must be directed. In order
to overcome this I threaded
the tube over a long *gum*
-elastic catheter, the tip
of which is then passed
through the cords under
direct vision (Figs. 1 and 2)
Using the catheter as a
guide the tube is gently
pushed down into
position (Fig. 3) and the
guide is then withdrawn.
I find this to be
useful, too, when for one
reason or another - eg. a
patient with prominent
front teeth - exposure of
the larynx is inadequate
to pass a standard Magill
tube easily. The guide
can be curved to direct it

through the partially exposed glottis, after which the outer tube readily
follows into position.

