LETTERS TO THE EDITOR

Chest Discomfort, Cocaine, and Tobacco

To the Editor:—The majority of previously reported patients with cocaine-associated myocardial infarctions (MIs) were cigarette smokers.[1] Coronary artery vasoconstriction occurs both after the nasal insufflation of cocaine hydrochloride[2] and after cigarette smoking.[3] Therefore, we had previously hypothesized that the use of cocaine in temporal proximity to cigarette smoking may play a role in the pathogenesis of myocardial ischemia.[1] Recently, Moliterno et al.[4] showed that the effects of cocaine on myocardial O_2 demand are exacerbated by concomitant cigarette smoking. This combination of toxins increased the metabolic requirement of the heart for O_2, while simultaneously decreasing the diameter of diseased coronary artery segments. As a result of their investigation, we reanalyzed data from the cocaine-associated chest pain (COCHPA) trial.[5]

During the prospective study of 246 patients who presented to the ED with cocaine-associated chest discomfort, we collected data describing the time of last cocaine use, the duration of time between cocaine use and the onset of chest discomfort, and the time of the patient's last use of tobacco (if it was in the last 12 hours).

Patients were eliminated from this analysis if their last use of cocaine was more than 12 hours prior to arrival; or if the patient continued to smoke tobacco after the onset of chest pain. We could not establish the relationship between the onset of chest pain and most proximate tobacco use for patients who continued to smoke after the onset of chest pain, because we recorded only the patients' last use of tobacco.

Analysis of the 51 patients who had used both cocaine and tobacco in the 12 hours prior to presentation revealed that the time between cocaine use and tobacco use was related to the onset of chest pain ($r = 0.62$, $p < 0.0001$). As the time interval between tobacco use and cocaine use shortened, the development of chest pain occurred more rapidly (Fig. 1).

The concurrent use of tobacco with cocaine may shorten the interval prior to onset of chest pain. While it remains unknown whether concurrent use of cocaine and tobacco increases the likelihood of MI, these data, along with those of Moliterno et al.,[4] suggest the possibility of a clinically relevant additive effect.

JUDD E. HOLLANDER, MD
HENRY C. THODE JR, PHD
ROBERT S. HOFFMAN, MD
Stony Brook Health Sciences Center,
Stony Brook, NY
School of Medicine
Department of Emergency Medicine
(JEH, HCT)
New York City Poison Control Center,
New York, NY
(RSH)

Key words: cocaine; coronary artery disease; tobacco; smoking; myocardial infarction.

REFERENCES

1. Hollander JE, Hoffman RS. Cocaine induced myocardial infarction: An analysis and review of the literature. J Emerg Med. 1992; 10:169–77.
2. Lange RA, Cigarroa RG, Yancy CW, et al. Cocaine induced coronary artery vasoconstriction. N Engl J Med. 1989; 321:1557–62.
3. Winniford MD, Wheelan KR, Kremers MS, et al. Smoking induced coronary artery disease: Evidence for adrenergically mediated alterations in coronary artery tone. Circulation. 1986; 73:662–7.
4. Moliterno DJ, Willard JE, Lange RA, et al. Coronary artery vasoconstriction induced by cocaine, cigarette smoking, or both. N Engl J Med. 1994; 330:454–9.
5. Hollander JE, Hoffman RS, Gennis P, et al. Prospective multicenter evaluation of cocaine-associated chest pain. Acad Emerg Med. 1994; 1:330–9.

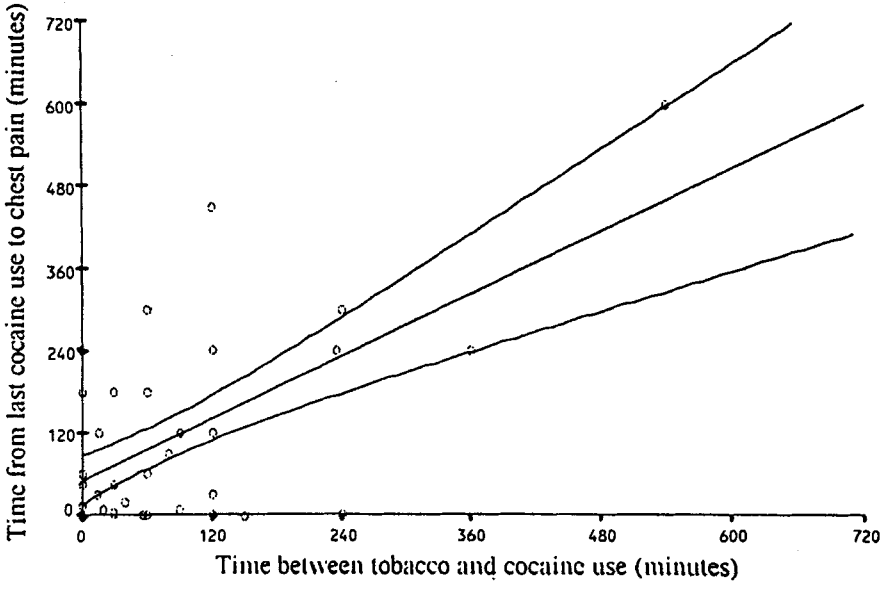

FIGURE 1. The effect of the temporal proximity of tobacco and cocaine use on the duration of time until chest pain. The upper and lower lines represent 95% CIs.

Catheter-assisted Intubation

To the Editor:—Sloan and VanRooyen describe a new technique, suction catheter-assisted nasotracheal intubation, and its successful application in four case reports.[1] While this technique may in-

crease the success rate for nasotracheal intubation, the choice of nasotracheal intubation for emergency airway control in some of the cases presented must be questioned.

Their first case was a combative overdose patient who required intubation for airway protection. Persisting with attempts at nasotracheal intubation in this situation can be hazardous. The risk of epistaxis, vomiting, and aspiration during attempted nasotracheal intubation of overdose patients must be considered. Dronen et al. found significantly decreased complications, an increased success rate, and a decreased time interval to intubation using succinylcholine-assisted intubation, compared with blind nasotracheal intubation in overdose patients.[2]

Sloan and VanRooyen's fourth case was a disoriented, combative blunt trauma patient who needed tracheal intubation to improve oxygenation. Suction catheter-assisted nasotracheal intubation was successful on the second attempt, after "attempts" had been made with standard nasotracheal intubation techniques. The case report does not state whether the patient had a significant head injury. While controversy exists as to the best method for emergency intubation in trauma patients, hypoxia should be minimized. Delays inherent with numerous attempts at nasotracheal intubation would not occur with a controlled rapid-sequence intubation.[3] When traumatic brain injury is suspected, attempts at nasotracheal intubation in a combative patient pose the risk of increased intracranial pressure and prolonged hypoxemia. Both of these insults can lead to secondary brain injury.[4,5]

Finally, in citing clinical settings in which nasotracheal intubation may be preferred, the authors mention "when the nasotracheal route is preferred long-term for patient comfort." It is difficult to accurately predict in the ED which patients will require long-term intubation. It also is debatable whether a nasotracheal tube is safer or more comfortable for the patient than is an orotracheal tube. Some intensivists are leery of long-dwelling nasotracheal tubes because of bacterial colonization and the risk of sinusitis or sepsis.[6]

Suction catheter-assisted nasotracheal intubation may be a useful adjunct to traditional blind nasotracheal intubation. However, use of this technique in overdose and multiple trauma/brain injury patients may not be warranted. Further research should address the relative merits of catheter-assisted nasotracheal intubation over rapid-sequence intubation in these circumstances.

BRIAN J. ZINK, MD
University of Michigan Medical Center, Ann Arbor, MI
Section of Emergency Medicine (BJZ)

Key words: intubation; tracheal intubation; nasotracheal intubation; device; guide.

REFERENCES

1. Sloan EP, VanRooyen MJ. Suction catheter-assisted nasotracheal intubation. Acad Emerg Med. 1994; 1:388–90.
2. Dronen SC, Merigian KS, Hedges JR, et al. A comparison of blind nasotracheal and succinylcholine-assisted intubation in the poisoned patient. Ann Emerg Med. 1987; 16:650–2.
3. Rotondo MF, McGonigal MD, Schwab CW, et al. Urgent paralysis and intubation of trauma patients: is it safe? J Trauma. 1993; 34:242–6.
4. Redan JA, Livingston DH, Tortella BJ. The value of intubating and paralyzing patients with suspected head injury in the emergency department. J Trauma. 1991; 31:371–5.
5. Walls RM. Rapid-sequence intubation in head trauma. Ann Emerg Med. 1992; 22:1008–13.
6. Deutschman CS, Wilton P, Simon J, et al. Paranasal sinusitis associated with nasotracheal intubation: a frequently unrecognized and treatable source of sepsis. Crit Care Med. 1986; 14:111–4.

In response: I appreciate the opportunity to respond to Dr. Zink's letter, in which the use of catheter-assisted nasotracheal intubation for emergency airway control is questioned.

Dr. Zink objected to the use of nasotracheal intubation in the combative overdose patient, stating that 1) repeated attempts increase the risk of complications and 2) the use of paralytic agents increases the success rate and shortens the time to intubation.

I do not encourage repeated attempts at nasotracheal intubation. In fact, catheter-assisted nasotracheal intubation is proposed in order to reduce the need for repeated attempts. Although Dronen et al.[1] showed that the time from the start of intubation to its completion is shorter with paralytic agent use, preparation time was not measured. With most intubations, the time needed to obtain supplies, medicate, and preoxygenate the patient is much longer than the time used to place the endotracheal tube into the airway. This makes any difference in the time intervals for tube placement clinically less important. Also, when intubation is used to secure the airway in a semielective situation (as opposed to treating respiratory arrest, for example), any additional time needed to achieve nasotracheal intubation is less important.

Dr. Zink also objected to the use of nasotracheal intubation in multiple trauma patients with altered mental status at risk for having significant head injury. I agree with his assertion that rapid-sequence intubation is the method of choice when managing head-injured trauma patients acutely. The patient in our fourth case, for whom catheter-assisted nasotracheal intubation was successful, had already been admitted to the intensive care unit (ICU). During the acute resuscitation, a significant head injury had been excluded. Several days into the ICU stay, the patient's clinical course was complicated by agitation and hypoxia, which were caused, in part, by alcohol withdrawal. In treating this patient, it was believed that intubation for airway control and sedation were all that were required for the patient.

I agree with Dr. Zink that it is unclear when nasotracheal intubation is preferable long-term, given variable times to extubation and the risk of sinusitis and sepsis. These concerns, however, can be addressed by modifying airway control in the ICU setting.

Despite the limitations of the nasotracheal route, it should not be assumed that rapid-sequence induction and orotracheal intubation are clearly preferable over nasotracheal intubation, especially when the need for airway control is not emergent. Emergency department patients have the greatest risk for aspiration during intubation because 1) the stomach is often full, 2) the ability to maintain cricoid pressure until intubation can be inconsistent, and 3) suc-