more severe than, the previous gallbladder pain. Symptoms started within 20 min of the injection and rose to a crescendo in the next 15 minutes. When the cause was recognized and an intravenous injection of either naloxone 0.2–0.4 mg or pentazocine 15–30 mg given, the pain disappeared within 3 minutes; otherwise the pain gradually subsided over a half-hour period.

This syndrome is not a new discovery. In 1942, J. S. Lundy wrote, "In some patients . . . pain caused by the sphincter of Oddi may develop. I have seen this happen most often among patients on whom cholecystectomy has been performed and who then have suffered from postoperative attacks similar to gallbladder colic. It is not unusual for morphine, used as a preliminary medication, to produce an attack, the pain of which resembles gallbladder colic."

The pain of cardiac ischemia is relieved, not caused, by morphine. In the circumstances described, there should be no confusion as to the biliary origin of the pain. Immediate relief from injection of a narcotic antagonist confirms the diagnosis. It is important that this uncommon reaction to opioids be recognized promptly and treated appropriately.

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REFERENCES

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A Technique of Laryngoscopy for Difficult Intubation

To the Editor.—Insertion of a conventional laryngoscope blade is often difficult, if not impossible, in massively obese patients or patients with kyphosis, barrel-shaped chest, rigid neck, or patients in cervical traction because the handle impinges on the chest of such patients (fig. 1).

To overcome this problem, use of the Polio blade,1,2 a newly designed, adjustable-angle laryngoscope,3 or a short handle4 laryngoscope has been suggested.

However, all the hospitals do not stock these unusual laryngoscopes. Also, one may be caught unaware and not

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![Fig. 1. Conventional laryngoscope blade insertion impinges on chest of some patients.](image1)

![Fig. 2. Modified conventional laryngoscope blade insertion in patients with chest problems.](image2)
have time to wait for the proper laryngoscope. We have modified the technique of laryngoscopy in such situations so we can use the conventional laryngoscope. Our technique is to detach the blade from the laryngoscope and insert it into the mouth, with the help of the tongue blade if necessary. After the blade is in place in the mouth, the handle is attached to the blade (fig. 2). Blade and handle attach easier when they are at an angle of about 80° than when they are perpendicular to each other. This maneuver can be used for either a curved or a straight blade.

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Caution in Making Clinical Recommendations Based on Electromyographic Measurements

To the Editor:—We read with great interest Dr. Kopman's recent clinical report, "The Relationship of Evoked Electromyographic and Mechanical Responses following Atracurium in Humans". Properly documented clinical observations and appropriate clinical recommendations will become invaluable as this type of monitoring achieves greater use in the operating room. Regarding the author's recommendations in the above-mentioned paper, we believe there are certain very important issues that must be clarified. Our own impressions based on clinical use of the Datex® NMT 221 Neuromuscular Transmission Monitor differ from those of Dr. Kopman, who compared the integrated electromyogram (EMG) potential and mechanical twitch (mechanomyogram [MMG]). Both EMG and MMG values are represented as ratios with respect to control values, or EMG T1/Tc and MMG T1/Tc. The author observes that, during atracurium blockade, EMG is less sensitive to depression than MMG, the data showing that EMG values exceed corresponding MMG values by 15%. Hence, Kopman concludes that in order to obtain adequate surgical relaxation under nitrous oxide–narcotic anesthesia requiring 90% twitch depression, i.e., MMG T1/Tc = 0.10, an EMG T1/Tc of only 0.25 need be attained; and in the presence of potent volatile anesthetics, surgical relaxation that would require 75% twitch depression, i.e., MMG T1/Tc = 0.25, an EMG T1/Tc of only 0.40 to 0.45 is needed.

Our own experience with the Datex® NMT 221 persuades us to seek higher degrees of EMG depression during clinical dosing of muscle relaxants. For example, we note that coughing can often occur during laryngoscopy at EMG T1/Tc values of 0.15 and, on rare occasions, as low as 0.10. Recovery from muscle blockade seems to correlate even less consistently with EMG T1/Tc values. One of our patients, after a 6-hour surgical procedure, demonstrated a sustained head-lift of 5 s despite an EMG T1/Tc of only 0.51 and an EMG T4/T1 ratio of 0.10.

It should be emphasized that differences in EMG recordings may result from differences in technique of application. One major variable is the initial calibration of the monitor in order to obtain a baseline, or 100% value. There is evidence that the baseline drifts downward significantly during the first several min after anesthetic induction and before the administration of muscle relaxants. In Dr. Kopman's clinical report, it is hinted that this baseline was obtained after it had become "stable" for at least 5 min. As a result, T1/Tc ratios based on this "stable" baseline would be higher than if the baseline had been obtained earlier in the anesthetic. There are a number of other variables that may affect EMG response. For example, immobilization of the hand and digits is recommended to eliminate motion artifact. We have seen changes in the EMG tracing as a result of alteration in the position of the digits, surgical positioning, and possibly even blood pressure cuff inflation. The effect of such variables as regional blood flow, sympathetic tone, CNS depression, and changes in skin impedance and electrode impedance need to be assessed. It is known that upper motor neuron lesions can produce EMG changes suggestive of lower motor neuron disease.

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