

arterial catheterization, are not apparent from our data. Similarly, it is unclear why patients in Group I had higher systolic blood pressures following placement of a pulmonary arterial catheter than did patients in Group VIII after placement of a radial arterial catheter. Perhaps, preparation and draping of the neck produce more anxiety in patients than preparation of the wrist. On the other hand, it is possible that the Trendelenburg position, and/or turning the neck prior to puncture of the skin, primes the sympathetic nervous system to overreact in response to pain. Increases in  $P_{aCO_2}$  secondary to rebreathing are not an explanation for this finding, as patients receiving a pulmonary arterial catheter did not have their faces covered with the draping material during the implantation procedure.

In conclusion, our data demonstrate that placement of pulmonary or radial arterial catheters in unanesthetized patients produces significant increases in systolic arterial blood pressure and heart rate in pa-

tients who have a variety of cardiovascular diseases. Our findings indicate that in patients who have coronary-artery disease and are not receiving propranolol these changes may be severe enough to produce angina. The data indicate that invasive monitoring in patients with CAD not taking propranolol should be minimized or performed after a reasonable depth of anesthesia is established.

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## Tracheobronchopathica Osteochondroplastica Diagnosed as a Result of Difficult Intubation

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The rare entity of tracheobronchopathica osteochondroplastica manifesting as a case of difficult intubation is reported. The diagnosis was made on the basis of the typical bronchoscopic appearance and confirmed by tracheal biopsy.

#### REPORT OF A CASE

A 74-year-old woman was scheduled to undergo carotid endarterectomy for symptomatic carotid stenosis. Three and a half months earlier she had undergone sigmoidal colectomy. At that time a 7.5-mm orotracheal tube had been used, without difficulty.

Following induction of anesthesia, an attempt was made to insert an 8.0-mm orotracheal tube. The tube was easily passed through the vocal cords, but met an obstruction approximately 2 cm below the cords. Further attempts with smaller tubes (7.5 and 6.0 mm) met the same obstruction. Flexible fiberoptic bronchoscopy was then performed through the 8.0-mm endotracheal tube, revealing that the proximal end of the tube was obstructed by numerous large stalagmite-like nodules. Multiple biopsies of the nodules were taken, and the endarterectomy cancelled.

Examination of the biopsy specimens revealed the lesions to be submucosal proliferations of cartilage and bone formation. In one area normal appearing bone marrow was seen. Stains for amyloid were negative. These findings confirmed the bronchoscopic diagnosis of tracheobronchopathica osteochondroplastica.

The endarterectomy was subsequently successfully performed with the use of local anesthesia.

#### DISCUSSION

Tracheobronchopathica osteochondroplastica is characterized by numerous large submucosal cartilage-bone protuberances within the lumen of the trachea and/or mainstem bronchi.<sup>1,2,3,5</sup> Most of the 245 cases reported through 1974 were diagnosed as incidental findings at autopsy.<sup>2,4,7</sup> Because of its rarity, many experienced endoscopists have never seen a case. Fewer than 50 cases have been recognized bronchoscopically. No previous case has been diagnosed as a result of a difficult intubation.

Clinically, there is no pathognomonic sign or symptom, and most patients are asymptomatic. However, symptoms can include dry cough, dryness of the throat, voice changes, moderate dyspnea, hemoptysis,

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and recurrent pulmonary infections.<sup>6</sup> At least six patients have undergone pulmonary resections as a result of bronchial obstruction.<sup>8</sup>

The prognosis is generally excellent, with the airway obstruction usually progressing slowly. However, the disease may progress to a fatal outcome.

An association with primary amyloid of the trachea is controversial, with considerable overlap between the two conditions.

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## Prophylactic Single-dose Oral Antacid Therapy in the Preoperative Period— Comparison of Cimetidine and Maalox®

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In obstetrics, aspiration of gastric contents is the most common anesthetic complication and the one associated with the most deaths.<sup>1</sup> This complication is not limited to obstetric anesthesia. Culver, Makel and Beecher,<sup>2</sup> in 1951, found evidence of regurgitation in 26.3 per cent, aspiration in 16.3 per cent, and vomiting in 8 per cent of unselected non-obstetrical surgical patients after administration of general anesthesia. Other studies have confirmed this potential danger in emergency as well as elective operations.<sup>3-5</sup>

Since the report by Mendelson on aspiration pneumonitis, in 1946,<sup>6</sup> antacids have been used as prophylaxis. However, drawbacks are apparent. These include decreased effectiveness with time,<sup>7</sup> associated increases in gastric volume,<sup>8</sup> possible pneumonitis from aspirated antacid and inconsistency in pH changes,<sup>9</sup> and increases in gastric emptying time.<sup>10</sup>

A further pharmacologic possibility in prophylaxis of aspiration pneumonitis has come with the introduction of cimetidine (Tagamet®), a histamine H<sub>2</sub>-receptor-blocking agent used for treatment of peptic ulcer disease. Cimetidine is a potent inhibitor of all phases of gastric secretion. Both nocturnal and basal

acid secretion are reduced 90-95 per cent for five to seven hours by a 300-mg dose.<sup>11,12</sup> It also inhibits meal-stimulated acid secretion by about 70 per cent over a three-hour period. Anticholinergic medication appears to augment the inhibitory effect of cimetidine on gastric secretion.<sup>13</sup> No change has been found in lower esophageal sphincter pressure,<sup>14</sup> gastric emptying, or postprandial output of bile acids and pancreatic enzymes.<sup>15</sup> Single-dose therapy has not been associated with any side effect. This study was planned to evaluate the possible role of cimetidine in prophylaxis of aspiration pneumonitis.

#### MATERIALS AND METHODS

This study was approved by the Human Use Committee of the University Hospital. Each patient gave informed consent to participate in the study. Three study groups were formed by random selection for female patients, ages 20-35 years, ASA classes I and II, scheduled for laparoscopic examination or sterilization. Every patient received diazepam, 10 mg, orally an hour before induction, and no patient received anticholinergic medication. The first group (n = 12) received, in addition, cimetidine, 300 mg, orally two hours prior to induction of anesthesia; the second group (n = 12) received Maalox®§ (William H. Rorer, Inc.), 30 ml, orally, one hour prior to induction of anesthesia; the third group (n = 10) received only diaz-

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§ Magnesium and aluminum hydroxides.