any other focus, which could be the source for the infection of the right clavicle, its involvement may be explained by the attempted right subclavian catheterization. Fever and chills were conspicuously absent, and the sole clinical finding was pain and tenderness in the involved area accompanied by the increased sedimentation rate, which is typical for osteomyelitis caused by *P aeruginosa.* The needles and catheters used in our hospital are disposable; therefore, they could not be blamed for the inoculation of *Pseudomonas*. It seems that the patient’s skin was the only possible source of the infection.

Despite the widespread use of subclavian vein catheterization, this procedure has been associated with serious complications, and especially when total parenteral nutrition has been applied in patients with compromised resistance to infectious complications. Therefore, in cases at high risk for infections, alternate sites of venous access such as internal jugular vein catheterization should be considered because of its easy accessibility and the lower risk involved.

Osteomyelitis of the clavicle should be considered when pain develops in the clavicular area, even when fever and chills are absent.

**REFERENCES**


**CPAP Via Nasal Mask: A Treatment For Occlusive Sleep Apnea**

Mark H. Sanders, M.D., F.C.C.P.; Sarah E. Moore, M.A.; and Jana Eveslage, R.R.T.

A 38-year-old man had incapacitating hypersomnolence and severe occlusive sleep apnea. Baseline polysomnography revealed 92.9 apneic episodes per hour of sleep. Application of nasal continuous positive airway pressure through a modified nasal nitrous mask using a ball-valve resistor resulted in reduction of occlusive apnea to 1.17 episodes per hour of sleep and marked improvement in the quality of sleep.

In the absence of a correctable anatomic deformity, therapy for occlusive sleep apnea includes weight loss, progesterational agents, oxygen, and tracheostomy. Recently, nighttime application of continuous positive airway pressure (CPAP) via nasal cannulae has been shown to decrease the number of apneic episodes in sleep apnea patients. This technique requires the running of silicone rubber over the nose and nares in order to achieve an air-tight seal around the cannulae. It is likely that the nightly application of silicone rubber sealant and its subsequent removal every morning would be burdensome, if not unacceptable, to many patients. Therefore, a nasal CPAP system has been designed which obviates the need for such a sealant.

**CASE REPORT**

A 38-year-old white man was referred for evaluation of loud, periodic snoring and hypersomnolence. Physical examination revealed

*From the Pulmonary Disease Division; Department of Medicine; University of Cincinnati, Ohio.*

Reprint requests: Dr. Sanders, 440 Scuffe Hall, University of Pittsburgh School of Medicine, Pittsburgh 15261
vealed an obese individual weighing 113.6 kg. There was mild macroglasia, but the pharynx was widely open. Indirect laryngoscopy and computerized tomography of the upper airway were normal. Spirometry was normal, and except for "saw-toothing," the flow-volume loop was also normal.

Initial polysomnography was performed during a brief night-time evaluation (Table 1). Airflow was measured with a face-mask pneumotachograph system, and an esophageal balloon recorded ventilatory effort. The EEG was recorded with surface electrodes.

Two months following the initial study, the patient returned for night long polysomnography. The first hour of study provided a baseline, after which nasal CPAP was applied. A nasal nitrous inhaler (Fraser-Sweatman Inc) was modified by plugging the slide-valve. In addition, the inner edges of the mask were lined with foam rubber to ensure patient comfort and to provide an air-tight mask interface. Head straps were used to hold the nasal mask in place. An air compressor (Timer Instruments Corp) generated bias flow across the mask in sufficient quantity to satisfy patient demands. The CPAP was created by variable weight ball valves placed on the expiratory limb of the system (Fig 1). Ventilatory efforts during sleep were monitored by an abdominal pneumograph bellows, nasal breathing was recorded by measuring expired CO$_2$ within the CPAP system, and a thermistor recorded mouth breathing. Pressure within the CPAP system was continuously monitored as well.

RESULTS AND DISCUSSION

Ventilation during sleep was dramatically improved by the application of 12.5 cm H$_2$O CPAP delivered via the nasal mask (Table 1). Sleep architecture while on CPAP was characteristic of sleep following a period of sleep deprivation. Furthermore, the patient reported greater alertness and no hypersomnolence for the 24-hour period following the night of CPAP. Thus, there was objective and subjective evidence that CPAP improved the quality of sleep. This patient had no difficulty arranging the mask system on his nose and experienced no facial discomfort during or after the study. The patient is currently using the nasal CPAP system at home where he finds it easily manageable. He continues to note the absence of daytime somnolence after nights on nasal CPAP.

In conclusion, CPAP through a nasal mask resulted in significant amelioration of sleep-associated apnea in our patient. The nasal mask is likely to be better tolerated than the previously described nasal CPAP system. While it may not be suitable for all individuals with occlusive sleep apnea, CPAP via a nasal mask may be an alternative to tracheostomy for patients in whom medical therapy has failed.

REFERENCES


Myxoma of Right Ventricle Presenting as Pulmonic Stenosis in a Neonate

Rohinton K. Balsara, M.D.,† and Anastasio J. Pelias, M.D.‡

A congenital myxoma of right ventricle presented as pulmonic stenosis. Investigation of such a lesion is discussed along with its surgical management.

*From the Section of Pediatric Cardiac Surgery, St. Christopher's Hospital for Children and Temple University, Philadelphia.
†Associate Professor of Surgery.
‡Senior Resident in Cardiac Surgery.
Reprint requests: Dr. Balsara, St. Christopher Hospital, Philadelphia 19133

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Reprint requests: Dr. Balsara, St. Christopher Hospital, Philadelphia 19133