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Obstructive Sleep Apnea Syndrome Associated With Nasopharyngeal Carcinoma

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THE SLEEP APNEA SYNDROME consists of at least 30 apneic episodes observed in both rapid eye movement (REM) and non-REM sleep, some of which must appear in a repetitive sequence in non-REM sleep. It is a well-described symptom complex manifested by excessive daytime hypersomnolence, hypnagogic hallucinations, personality and sexual behavior changes and hypertension.[1,2] The syndrome has been subdivided into central, upper airway obstructive and mixed apnea according to pathogenic mechanisms. Rare cases of upper airway obstructive apnea have documented structural abnormalities.[2-9] We present the case of a patient referred for evaluation of a sleep disorder with associated severe hypertension. The patient's condition was diagnosed as the sleep apnea syndrome, upper airway obstructive type, secondary to a poorly differentiated epidermoid carcinoma of the nasopharynx.

Report of a Case

A 43-year-old black man was admitted to hospital with hypertension and frequent inappropriate episodes of falling asleep. Eighteen months before admission, hypertension had been noted and was treated medically for six months. Six months before admission, otitis media had been treated with a myringotomy tube in an ear, nose and throat clinic. Three months later disabling daytime hypersomnolence and episodes of hypnagogic hallucinations were noted. A month before admission dextroamphetamine sulfate therapy was begun for presumed narcolepsy. The patient was admitted to another hospital with a blood pressure of 180/140 mm of mercury, mild azotemia, mental confusion and grade 4 hypertensive retinopathy. He was treated vigorously for hypertension and transferred to Fitzsimons Army Medical Center.

On physical examination the patient was a well-developed, normocephalic, slightly obese man who snored loudly and was easily aroused from sleep. The patient was 183 cm (6 feet) tall, 95 kg (209 pounds), normotensive and afebrile. He was found to have grade 4 hypertensive retinopathy, a myringotomy tube on the left side, slightly edematous nasal mucosa and normal oropharynx. Laboratory findings gave the following values: blood urea nitrogen (BUN) 25 mg per dl, creatinine 1.5 mg per dl and lactate dehydrogenase (LD) 389 units per ml. Analysis of urine showed granular and hyaline casts and proteinuria. The remainder of the physical examination and standard laboratory tests gave normal results. The sleep apnea syndrome was suspected by history and clinically verified by sleep observation during which multiple episodes of apnea, despite continued thoracic respiratory effort, were noted. An electroencephalogram showed abnormal development of REM for light sleep with apneic episodes observed. Study of pulmonary function flow-volume loops was consistent with extrathoracic obstruction. Findings on a brain scan were normal. Sleep monitoring failed to disclose significant arrhythmias or oxygen desaturation. Nasopharyngeal and retropharyngeal swelling with airway compromise was observed on a xerogram. Examination under general anesthesia detected a lymphoid mass in the nasopharynx, which completely obstructed the right choana, 50 percent of the left choana and both eustachian tubes. Pathological diagnosis was benign lymphoid hyperplasia and a tracheostomy was done. Hypertension and daytime hypersomnolence resolved within four days without administration of any medications.

In two weeks the tracheostomy was closed and, despite a lack of change in mass size as indicated by xerography, the patient did well and the case was followed on an outpatient basis for six weeks. However, the patient then returned with recurrent

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symptoms of hypersomnolence, excessive snoring, cervical lymphadenopathy, a weight gain of 6 kg and hypertension of 180/120 mm of mercury. He was treated medically for his hypertension and a repeat tracheostomy was carried out. A submandibular lymph node biopsy was done and the specimen disclosed poorly differentiated epidermoid carcinoma. Repeat panendoscopy with biopsy of an exophytic posterior nasopharyngeal mass confirmed the diagnosis.

All symptoms referable to sleep apnea syndrome, including hypertension, cleared again within three to five days after the tracheostomy. Administration of antihypertensive medications was discontinued and the patient remained normotensive. The patient was treated with local radiation therapy and remained without evidence of recurrent sleep apnea syndrome until his death three months later. Pulmonary, hepatic, splenic and osteoid metastatic lesions developed and the patient was treated unsuccessfully with systemic chemotherapy before his death.

Discussion

The sleep apnea syndrome is found in patients with the Shy-Drager syndrome, myotonic dystrophy, narcolepsy and hypothyroidism.[10] It has also been reported to be familial.[11] Most cases of sleep apnea syndrome are secondary to upper airway obstruction and usually are caused by intermittent hypotonia of the soft palate and tongue musculature.[1-6] Rare cases of obstructive sleep apnea syndrome result from anatomic abnormalities such as enlarged tonsillar and adenoidal tissue, lymphoma, acquired micrognathia, micrognathia associated with the Scheie syndrome, nasal deformities and laryngeal webs.[7-9]

To the authors' knowledge this is the first report of a case of obstructive sleep apnea syndrome secondary to nasopharyngeal carcinoma. The case illustrates many features of this syndrome and the variety of problems that may occur before determining the correct diagnosis and therapy. Hypertension was noted in 56 percent of patients in one study of obstructive sleep apnea and was usually moderate.[2] In our patient, however, hypertension was a prominent feature that responded to appropriate therapy for the underlying sleep apnea syndrome. The syndrome is becoming increasingly recognized as a relatively common sleep disorder and should be suspected in the clinical setting as outlined by others.[1,2] The involvement of organs adjacent to the nasopharynx should heighten suspicion of structural abnormalities and appropriate evaluation should be made.[12,13]

Summary

A patient was referred for evaluation of excessive hypertension and a sleep disorder. This condition was diagnosed as sleep apnea syndrome secondary to upper airway obstruction caused by a poorly differentiated epidermoid carcinoma of the nasopharynx. Sleep apnea syndrome is becoming increasingly recognized as a relatively common sleep disorder. Involvement of organs adjacent to the nasopharynx should heighten suspicion of anatomic lesions obstructing airflow and necessitates appropriate evaluation.

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