

CASE REPORT

Obstructive Sleep Apnea as the Initial Manifestation of Acromegaly

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ABSTRACT

Obstructive sleep apnea syndrome (OSAS) is the most common type of sleep disorder, a chronic condition characterized by frequent episodes of upper airway obstruction during sleep. There are serious complications associated with this condition, varying from different respiratory complications, neuropsychiatric disturbances to increased risk of hypertension and cardiovascular disorders. The OSAS frequently occurs in acromegaly patients with a high prevalence rate of 20 to 50%. The symptoms of sleep apnea, including snoring, tiredness, and excessive daytime sleepiness, are often reversible with an appropriate treatment strategy. We report here a middle-aged woman with excessive snoring and severe headaches caused by sleep apnea as a first sign, years before definite diagnosis of acromegaly.

Keywords: Acromegaly, Sleep apnea, Sleep-disordered breathing.

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CASE REPORT

A 46-year-old married woman referred with symptoms of headache, snoring, and daytime sleepiness. She had reported a history of hypertension for previous 4 years.

Head and neck, abdominal, extremities, lung and heart examinations were normal, her body mass index (BMI) was 25 kg/m², and her neck circumference was 37.5 cm. Cranial nerve examination shown no abnormality. As sleep-disordered breathing was suspected, a polysomnography was conducted. By applying polysomnographic data (Fig. 1), the diagnosis of severe obstructive sleep apnea (OSA) was confirmed, and continuous positive airway pressure (CPAP) machine was administered for her condition. Two years later, she noticed a nodule in her neck. Further examinations showed a multinodular goiter. She afterward underwent for nodule resection surgery that was benign in pathology. Four years later she noticed facial changes which she thought was related to CPAP mask. Consequently, she experienced narrowing shoes and tightness of ring, change of voice tone along with numbness and tingling sensation in both hands. No significant past or family history of endocrine disorders was reported. Additional examinations showed elongated head, prominent supraorbital ridges, and enlarged extremities, nose, lips, and ears. A blood test reported fasting blood sugar = 120 mg/dL, prolactin = 80 ng/mL (normal = up to 20 ng/mL), insulin-like growth factor 1 = 633 µg/L (normal = up to 250 µg/L), growth hormone (basal) = 39 ng/mL (normal = less than 10 ng/mL), oral glucose tolerance test (OGGT) (1 hour after administration of 100 gm oral glucose) = 19.4 ng/mL, OGGT (2 hours after administration of 100 gm oral glucose) = 51 ng/mL. Her MRI showed a tumoral lesion in hypophysis of brain (Fig. 2).

DISCUSSION

The OSAS is a common disorder especially in obese adults characterized by recurrent episodes of apnea and hypopnea during the sleep. Total or partial collapse of the pharynx and upper airways due to changes in the soft tissue and the shape or size of the related bone and cartilage is the main cause of sleep apneas.¹⁻³ Such abnormalities may occur as a well-known result of acromegaly. The incidence of OSAS is 0.8 to 2.8% in children and 2 to 26% in adults (different races and populations). This condition is more common in obese adults with an incidence rate of 39 to 71% compared with adults with normal BMI.^{2,4} The OSAS may cause many different complications varying from oxygen desaturation, negative intrathoracic pressure, upper airway obstructions alone or with aerosol

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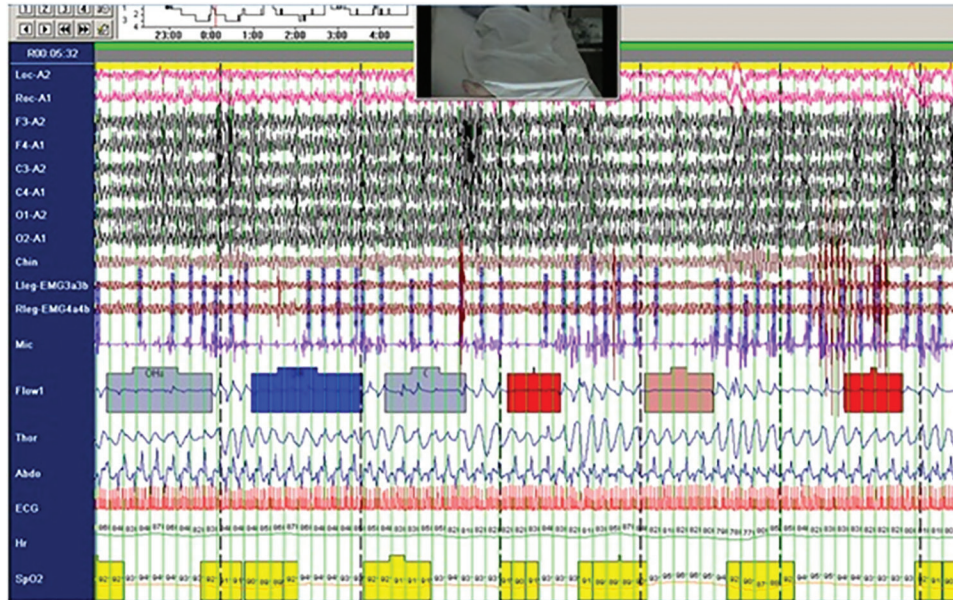


Fig. 1: Polysomnography illustrated OSA

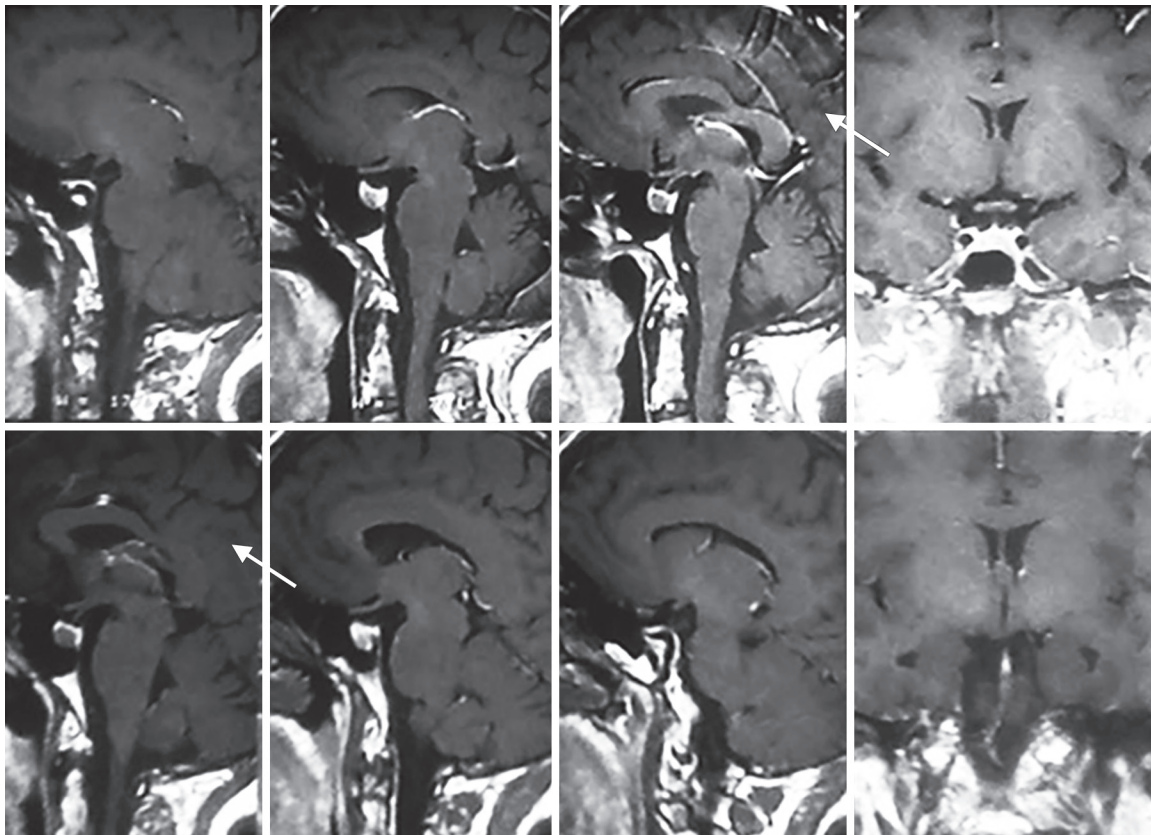


Fig. 2: Sagittal (right) gadolinium-enhanced T1-weighted MRI images. There was a well-defined mass seen with the size of 12 × 8 mm in the center of pituitary gland without stalk shift that is not getting enhanced after injection of contrast agent. It is more likely to be Rathke cyst. Dynamic MRI is more accurate and recommended

involvement, and repeated activation of sympathetic system that may cause activation of neural, humoral, metabolic, thrombotic, and many cases of inflammation and immune system activation that leads to atherosclerosis, hypertension, cardiovascular and cerebrovascular conditions, and increased risk of sudden death.⁵⁻⁷

Acromegaly is a disease resulting from excessive production of growth hormone (GH) and insulin-like growth factor type I (IGF-1) that in most cases are related to pituitary adenoma. Its prevalence is estimated around 0.3 to 0.4 per 100,000 per year. Acromegaly is characterized by slowly progressive deformities mostly in the face and

extremities.^{8,9} Because gradual changes in clinical signs of acromegaly, lead to a definitive diagnosis is delayed. There are many different disorders related to acromegaly including cardiovascular, rheumatologic, respiratory and metabolic involvements, and sleep disorders.

Ten years after the first introduction of acromegaly (1896), Roxburgh and Collins reported a patient who had acromegaly and suffered from daytime somnolence and sleeping spells, the symptoms of OSA.¹⁰ Nowadays OSAS is considered as a common disorder in acromegaly patients with a high prevalence rate. This condition increases the risk of cardiovascular complications in patients. The main reasons that increase the incidence rate of OSAS in acromegaly patients are deformities in craniofacial bones, hypertrophy of pharyngeal soft tissue, and mucosal thickening of the upper airways and bronchi.¹¹ There is a positive correlation reported between the incidence of OSA and GH/IGF-1 index in acromegaly patients.¹²⁻¹⁴ The OSA is more common in acromegaly patients who are male, elderly, have higher BMI and neck circumference and tongue size with greater duration of disease.^{11,13,14}

Our reported patient had undergone transsphenoidal surgery. Afterward, we had prescribed somatostatin analog for her.

CONCLUSION

In OSA patients, it is recommended to conduct a precise evaluation and close follow-up, by which a specific etiology like acromegaly may be discovered.

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