

Case Report

Paraneoplastic Facial and Upper Extremity Edema: A New Clinical Entity?

Berna Aksoy,^{1*} MD, Abdülkadir Cengiz,² MD, Temel Sarioğlu,³ MD

Address: ¹Dermatology, ²Internal Medicine and ³Radiology Clinics, TDV 29 Mayıs Hospital, Ankara, Turkey

E-mail: bmaksoy@mynet.com

* Corresponding Author: Dr. Berna Aksoy, Özel Konak Hastanesi, Yenişehir mah. Dönmez sok. No: 53 Bekirpaşa, İzmit, Kocaeli, 41050, Türkiye

Published:

J Turk Acad Dermatol 2010; **4** (1): 04102c

This article is available from: <http://www.jotad.org/2010/1/jtad04102c.pdf>

Key Words: edema, orofacial, paraganglioma, paraneoplastic, upper extremity

Abstract

Observations: Chronic orofacial edema may be a sign of a number of different clinical entities most of which are intermittently recurrent, chronic and erythematous. In this case report, we report a patient with paraneoplastic chronic orofacial and hand edema. Fifty four-year-old female patient was admitted with a complaint of swelling of the face and hands that had been present for 5 years. Upper abdominal computed tomography revealed a hypodense, solid, retroperitoneal mass measuring 53x85x100 mm in the left middle abdominal quadrant. The patient had been operated and the histopathological investigation of this retroperitoneal mass revealed paraganglioma. Four and a half months following the operation the patient reported that her facial edema decreased in intensity by 90%. Here, we present a case of retroperitoneal paraganglioma existing with chronic facial and upper extremity edema that was thought to be a paraneoplastic phenomenon.

Introduction

Chronic orofacial edema may be a sign of a number of different clinical entities [1]. Hereditary angioedema, thyroid disorders, superior vena cava syndrome, dental infections, recurrent erysipelas, chronic herpes simplex labialis, Crohn's disease, sarcoidosis, amyloidosis, local neoplasms, facial vasculitis, facial edema with eosinophilia, Ascher's syndrome and Melkersson-Rosenthal syndrome may be present with chronic orofacial edema [1, 2, 3]. Most of them are intermittently recurrent, chronic and erythematous. A number of chronic orofacial edema cases were reported in the literature related to local factors including facial, neck or chest problems.

Here, we describe a patient with paraneoplastic chronic orofacial and hand edema that

seems to result from a distant etiologic factor: Paraganglioma (PGL)

Case Report

Fifty four-year-old female patient was admitted with a complaint of swelling of her face and hands which had been present for five years. The facial and hand edema had been present and prominent every morning and decreased in intensity and disappeared at night. There was only edema without erythema, pruritus and dyspnea. The edema had not been associated with cosmetics, oral hygiene products, foods and sun exposure but edema had been increased in intensity with hot weather. No other provocative factors such as cold, sunlight, physical exercise or infection (herpes, streptococcus and chronic periodontal infections) could be identified by patient history or examination. She had had no known allergies. The patient had described myalgia but not proximal muscular weak-



Figure 1. Dermatologic examination revealed non-pitting, indurated, non-tender edema present in the patient's face particularly in the eyelids, cheeks and upper lip

ness. She had denied any gastrointestinal, cardiovascular, respiratory or endocrine disorders. She had never been hospitalized and never had facial paralysis. In the past medical history, the patient had been in menopause, using oral iron pills for anemia and had underwent operation for carpal tunnel syndrome. The patient did not describe any similar findings in her family. The patient lost 5 kilos of weight and had a cough but her general systemic health was normal. In dermatologic examination; a non-pitting, indurated, non-tender edema was detected on the face, particularly in the eyelids, cheeks and upper lip and also in the hands [Figure 1]. There were no peripheral lymphadenopathies. The tongue was normal. There were inconspicuous collateral vessels and fullness in the jugular veins increasing with inspiration.

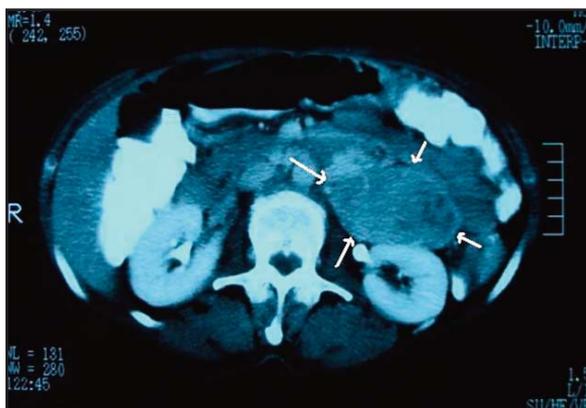


Figure 2. In the upper abdominal computed tomography a retroperitoneal, hypodense, solid mass, measuring 53x85x100 mm was detected in the left middle abdominal quadrant (arrows).

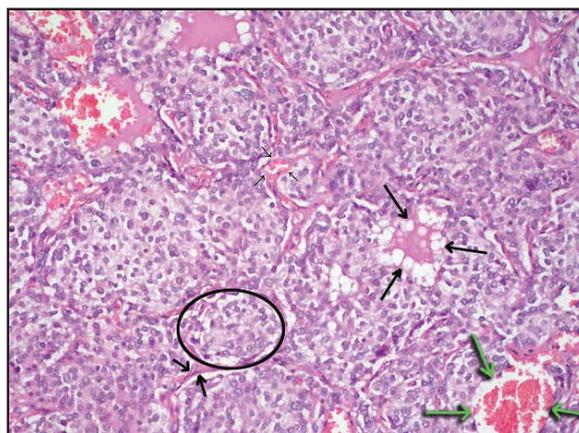


Figure 3. The histopathologic specimen has revealed that the tumor mass shows nested organoid patterned uniform neuro-endocrine cells (circle) which are separated with dilated vascular structures (thin small arrows), cystic structures (big, black arrows) and hematoma areas (green arrows) (Hematoxylin and Eosin Staining, Original magnification x100)

All laboratory examinations including complete blood count with differential, creatinine kinase, lactic dehydrogenase, erythrocyte sedimentation rate, complements C3 and C4, antinuclear antibody, anti-thyroid peroxidase, ferritin were all in normal range. Anti-thyroglobulin antibody was 48.9 IU/ml. In the thoracic computed tomography a nodular calcification sized one centimeter (cm) was detected in the retrocaval-pretracheal area that did not cause superior vena cava compromise and millimetric calcified nodules were detected in the subpleural area on the right side. Accidentally, a hypodense nodular lesion was detected in the anterior hepatic area that was scanned. Due to this finding an upper abdominal computed tomography was taken. A hypodense, solid mass measuring 53x85x100 millimeters (mm) was detected in the left middle abdominal quadrant neighbouring left kidney's anterior capsule, intestinal segments, psoas muscle, lower pole of the spleen and the tail of pancreas [Figure 2]. The patient was then operated in another center and the retroperitoneal mass was completely excised under general anesthesia. On the histopathological examination of the specimen, an encapsulated tumor mass showed nested organoid pattern that was separated by dilated vascular structures, cystic structures and hematoma areas [Figure 3]. The tumor cells were uniform neuro-endocrine cells characterized by central nuclei with dotted (salt and pepper appearance) chromatin and broad, pink cytoplasm containing fine granules. Sporadic hemosiderin pigment was detected among tumor cells. There were no mitoses. In the immunohistochemical examination, synaptophysin and chromogranin staining were positive indicating the

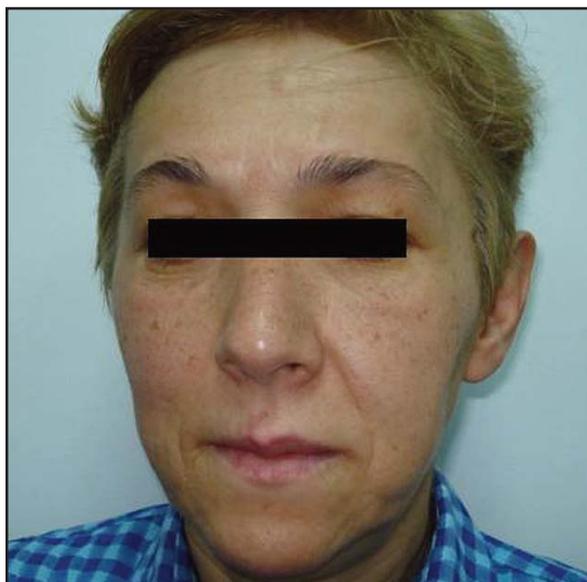


Figure 4. The appearance of the patient four and a half months following the operation. Her facial edema has decreased in intensity by 90% and she has also gained 5 kilos.

neuroendocrine character of the tumor cells. The histopathological diagnosis was paraganglioma.

Four and a half months after the operation, the patient stated that her facial edema had decreased in intensity by 90% one month after the operation [Figure 4]. She gained 5 kilos and was well without any sign of recurrence.

Discussion

In the differential diagnosis of chronic orofacial edema, various disorders should be kept in mind [1]. All of them are entities that act locally as a space occupying lesion or are the result of local edema because of various local acting disease processes. For the present case detailed examination disclosed a retroperitoneal mass and a retrocaval nodular calcification that had not any superior vena cava compromise. After the operation for the retroperitoneal mass, she experienced a decrease of intensity by 90% in the upper extremity and facial edema in the first postoperative month. This observation led us to the conclusion that the edema of our patient was related to the retroperitoneal mass lesion.

The adrenal medulla and sympathetic nervous system ganglia are derived from the neural crest and synthesize and secrete catecholamines. PGLs are rare tumors that arise from the chromaffine cells. Pheochromocytomas are rare tumors arising from cate-

cholamine producing cells in the adrenal medulla – an intraadrenal PGL. Adrenal and extraadrenal PGLs produce significant amounts of catecholamines and give rise to the clinical picture of pheochromocytoma. PGLs are classified as sympathetic or parasympathetic PGLs according to their origin.

Sympathetic PGLs are derived from the sympathetic chain of chest, abdomen or pelvis and produce clinical symptoms as a consequence of either the secretion of catecholamines or the size of the tumors with consequent impingement on neighboring structures. On the other hand, parasympathetic PGLs are tumors of parasympathetic ganglia that are usually located in the head and neck region and usually biochemically silent.

As in our case, nine percent of PGLs were diagnosed incidentally during the imaging for other diseases. Retroperitoneal PGLs are most likely to be malignant and present with a mass effect or pain. They metastasize to lungs, lymph nodes or bones or locally extend to vertebral column. In our patient, any metastases or either local extension was not detected.

The clinical presentation of PGLs is usually a local mass effect or rarely of classic catecholamine excess characterized by headaches, palpitations, perspiration, pallor, orthostasis and hypertension. About 8% of patients may be completely asymptomatic. We did not observe any symptoms caused by catecholamine excess in our patient with retroperitoneal PGL but only weight loss and upper body edema were present.

Our patient did not have any family history. As the age of the patient was older and she did not fulfill the other several clinical criteria, a genetic testing was not ordered. Genetic testing is recommended in young adults, especially for those having *von-Hippel-Lindau* disease [4].

PGLs secrete catecholamines (hypertension), neuropeptide Y (hypertension), PTHrP (hypercalcemia), ACTH (*Cushing's* syndrome), erythropoietin (erythrocytosis), and IL-6 (fever) [4]. Obviously, our patient's clinical picture was not a *Cushing's* syndrome. As our patient did not have any clinical symptoms mentioned and not have a histopathological diagnosis before operation, we did not perform

any biochemical analysis. Afterwards, we have clinically concluded that none of these peptides could cause this clinical picture in our patient so as none of them are known to cause edema. However, the possibility of neuropeptide Y, causing vasoconstriction, could be an etiologic factor for edema remained.

In conclusion, we present a case of a retroperitoneal PGL with chronic facial and upper extremity edema. The edema decreased in intensity by about 90% within one month after operation. The chronic facial and upper extremity edema was thought to be a paraneoplastic phenomenon in the presented case.

Acknowledgements

This manuscript was poster presented in the "22. National Dermatology Congress, 14-18 October 2008, Konya, Turkey"; We gratefully thank to Fuat

Atalay, Nesrin Turhan, Hüseyin Üstün and Hasan Mete Aksoy for their great contribution.

References

1. Litvyakova LI, Bellanti JA. Orofacial edema: a diagnostic and therapeutic challenge for the clinician. *Ann Allergy Asthma Immunol* 2000; 84: 188-92. PMID: 10719775
2. Dragan LR, Baron JM, Stern S, Shaw JC. Solid facial edema preceding a diagnosis of retro-orbital B-cell lymphoma. *J Am Acad Dermatol* 2000; 42(5 Pt 2): 872-874. PMID: 10767691
3. Nadruz W Jr, Carvalheira JBC, Brenelli SL. A man with chronic facial swelling. *Lancet* 2000; 355: 1516. PMID: 10801174
4. Karagiannis A, Mikhailidis DP, Athyros VG, Harsoulis F. Pheochromocytoma: an update on genetics and management. *Endocrine-Related Cancer* 2007; 14: 935-956. PMID: 18045948