НАУКА

MYELOLIPOMA COEXISTENCE WITH GLUCOCORTICOID AND ANDROGEN SECRETING ADRENOCORTICAL CARCINOMA: SLOW AND BENIGN CLINICAL COURSE

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Adrenal tumors are frequently detected in abdominal imaging. İn autopsy series, the prevalence of adrenal incidentalomas varies between 1-9%. However, the prevalence is higher in obese, diabetic and hypertensive patients [1]. Adrenocortical cancer(ACC) is very rare and has a poor prognosis. Five-year survival is approximately 50% in early stage disease and approximately 20% in advanced stage disease [2-5]. Adrenal myelolipomas (AML) contain varying amounts of hematopoietic elements and mature adipose tissue. It is a rare adrenal tumor and its incidence is 0.08–0.4% in autopsy series [6]. Adrenal myelolipomas are always nonfunctional, but they may occasionally be associated with congenital adrenal hyperplasia, cushing syndrome, conn syndrome and pheochromocytoma, which are functional disorders of the adrenal gland [7-9]. We herein report a relatively rare case of a myelolipoma with a adrenocortical cancer that grows slowly and becomes functional over time. In this report, we describe a case of adrenocortical cancer secreting glucocorticoid coexistent with a giant adrenal myelolipoma.

Case Presantion. A 48-year-old woman (body weight, 87 kg; height, 164 cm) presented at our outpatient clinic with a history of hypertension for about 5 years, and due to the development of acne lesions on the face. She said that she had wanted to become pregnant for the last 5 years, but the pregnancy has not occurred. There was no pregnancy history. She had a history of oligomenorrhea, weight gain, and heat intolerance for the last 1 year. She was in the perimenopausal period. Her past medical history was significant for having left giant adrenal tumor. Approximately 4 years ago, magnetic resonance imaging (MRI) revealed a mass of 110x70 mm in the left adrenal gland. At that time, cortisol suppression was found in the dexamethasone suppression test for functional evaluation. Due to mass size, removal of the tumor was recommended but she refused. No control evaluation was made within 4 years. Her father had diabetes and mother had hypertension. Patient's blood pressure and heart rate showed 150/90 mmHg and 78 beats/min respectively. She was taking amlodipine and olmesartan/hydrochlorothiazide for hypertension. There were acneic lesions on the face skin.

Laboratory findings. Complete blood count, renal function tests, thyroid function tests, liver function tests, and serum electrolytes were all within normal range (NR). Plasma renin activity, plasma aldosterone, twenty-four hours urine catecholamine and its metabolites were within the normal reference values. Cortisol levels after 1 mg and 2 mg dexamethasone suppression test were 11.3 mcg/dL and 10.6 mcg/dL, respectively. Basal serum ACTH level was <5 pg/mL. Although the ACTH level was suppressed, the DHEAS value was higher than the expected reference range for the patient's own age [DHEAS:409 mcg/dL(Reference range:56-282)]. Current laboratory findings indicated cushing syndrome and hyperandrogenism.

Radiological findings. Computed tomography revealed a heterogeneously contrasting mass of 145x118x100mm with lobular contour and soft tissue areas (Fig. 1). This mass was extending to the stomach and spleen at the top and compressing the left kidney at the bottom. Compared to the imaging report four years ago, there was an increase in mass size of approximately 30%.

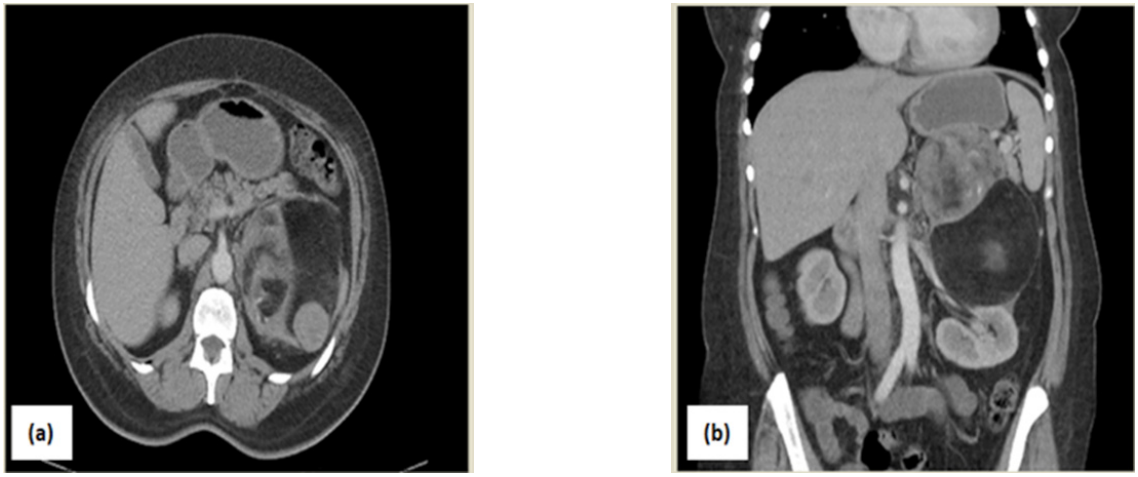

Fig. 1. Computed tomography (CT) scans. (a)CT shows a heterogeneous mass with lobular contour and soft tissue areas, (b)This mass was extending to the stomach and spleen at the top and compressing the left kidney at the bottom

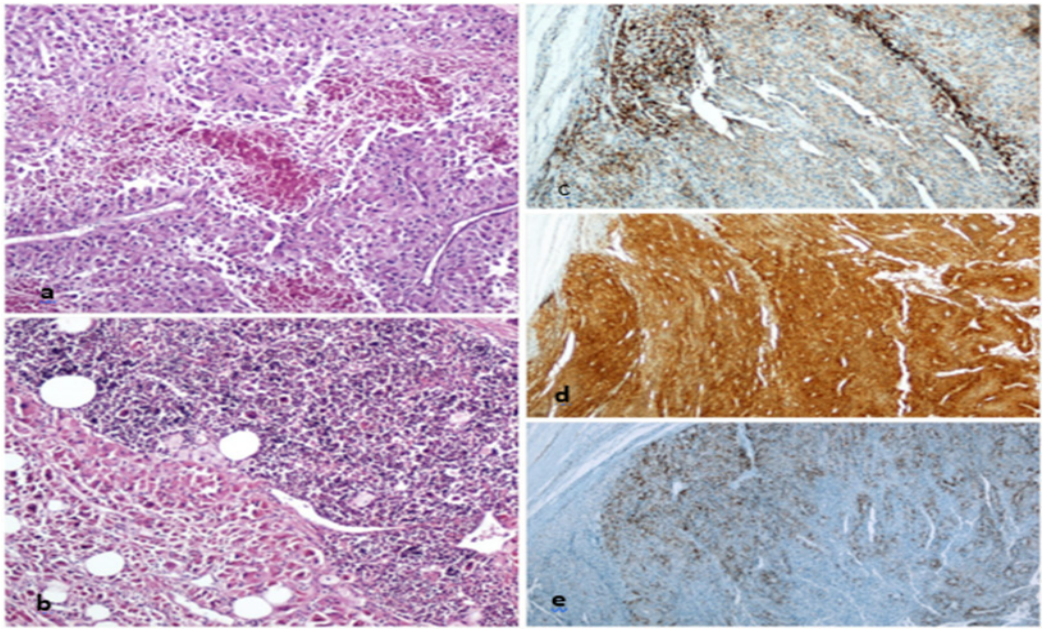

Fig. 2. Histologic section from tumor showing adrenocortical carcinoma and adrenal myelolipoma. (a) oncocytic type adrenocortical carcinoma with areas of necrosis (H&E X200), (b) adrenocortical cancer and adrenal myelolipoma foci showing in the same section (H&E X200), (c) Melan A positivity in tumor cells (Melan A X200), (d) positivity of diffuse synaptophysin (Synaptophysin X100), (e) focal inhibin positivity in tumor cells (Inhibin X100)

Surgical process. She was given surgery with steroid treatment according to Cushing protocol. Due to the compression effect of the mass, functional features, and atypical features of the mass, left adrenalectomy was deemed suitable. Laparoscopic transperitoneal left adrenalectomy was performed with three port technique. There were no complications in the perioperative period. The resected specimen weighed 850 grams. In the postoperative period, baseline cortisol 1.2mcg/dL, ACTH 24 pg/mL, DHEAS 8.4 mcg/dL were determined. Oral hydrocortisone treatment was continued at physiological dose because of steroid deficiency symptoms. Postoperative computed tomography showed no residual mass. Because of the presence of ACC, PET-CT was performed for possible metastasis. No metastasis was detected. Antihypertensive treatment was discontinued due to lack of need.

Pathological findings. Macroscopically, surgical material was 850 gr weighted and 15x14x10 cm seized. There was 3 surfaces encapsulated tumoral lesion, first and the largest one was 10 cm , the second was 4 cm adjacent to the first one , the third was 3 cm away and had 5 cm diameter. The cross-sectional face of the large tumor contains necrotic brown hemorrhagic areas. Circumference of the tumors was greasy. Samples were taken from the tumor and stained.

Microscopically; megakaryocytic, erythroid and lymphoid serial elements and in some areas bone lamellae and mature adipose tissue were observed in adrenal tissue. Also, oncocytic cells that have large hyperchromatic nuclei, eosinophilic nucleolus and nuclear pleomorphism and containing a small number of mitoses was seen in the tumoral tissue (Fig. 2).

Immunohistochemical analysis showed that the carcinoma cells were Synaptophysin, Calretinin diffuse positive, Inhibin, Melan A, and P53 focal positive, CD34, Chromogranin A, PanCK, HepPAR, S-100, CD-10 negative. Ki-67 proliferation index was 15%. The patient was diagnosed with myelolipoma and oncocytic variant adrenocortical cancer coexistence.

Despite the more frequent use of imaging techniques such as MRI and computed tomography, adrenal masses are still incidentally detected. Adrenal myelolipoma is a benign tumor composed of bone marrow-like hematopoietic elements and varying proportions of mature adipose. In imaging, a large amount of adipose tissue density is observed in myelolipomas [10]. These tumors are mostly detected between 5-7 decades and are usually detected equally in both sexes [11]. In addition, they are always nonfunctional and do not cause disorders in the hematopoietic system. Although hormone is inactive, these tumors may coexist with other diseases that endocrine dysfunction. For example, case reports of adrenal myelolipoma associated with congenital adrenal hyperplasia, 21-hydroxylase deficiency, 3-beta hydroxylase deficiency, primary hyperaldosteronism (conn syndrome), pheochromocytoma, and cushing syndrome have been reported [12-19]. In our case, we know that the adrenal mass was nonfunctional when it was first detected. In the following four years, we observed both an increase in mass size and autonomic glucocorticoid production.

Adrenocortical carcinomas are rare, accounting for about 1 case per 1 million in the population. They are highly aggressive tumors with a mortality rate of up to 50%. Approximately 60 percent of ACCs are secretory of hormone excess [20-24]. Adults with hormone-secreting ACCs often have only cushing syndrome. However, they occasionally have an overproduction of glucocorticoid and androgen, which causes a mixed Cushing's and virilization syndrome. ACC cases less than 10% can be presented only by virilization. However, if only virilization is present, the cause is more ACC than adenoma. In addition, muscle atrophy and skin weakness seen in cushing syndrome may not be observed if androgen excess is present in addition to glucocorticoid excess. In our case, although the ACTH was suppressed, DHEAS was found elevated for age and sex. Dexamethasone suppression tests were consistent with cushing syndrome. According to these

findings, both glucocorticoid and androgen levels were high. ACC associated with Cushing's syndrome leads to shorter survival due to the increased risk of infections and metabolic or vascular complications [25,26]. However, the clinical course was very slow in our patient and the surgical procedure was uneventful.

In the literature, fewer than 10 case reports have been published with ACC-myelolipoma coexistence [27-32]. In one case series, 49 ACCs were examined and 2 myelolipomas were identified but hormonal status was not specified [31]. Hyperaldosteronism was detected in one of the cases [27]. However, in other reports, cases were defined as nonfunctional [28,30]. Our case seems to be an unique in the literature in terms of hormonal status (both androgen and glucocorticoid hypersecretion).

In large adrenal tumors, excision is recommended because of the possibility of cortical cancer. In this report, the importance of this situation was clearly revealed. In summary, the giant adrenal tumors should be removed surgically even though having benign imaging characteristics. Also, the clinician should be alert to the non-functional adrenal tumor that begins to produce hormones over time.

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SUMMARY

MYELOLIPOMA COEXISTENCE WITH GLUCOCORTICOID AND ANDROGEN SECRETING ADRENOCORTICAL CARCINOMA: SLOW AND BENIGN CLINICAL COURSE

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We present a case of androgen and glucocorticoid secreting adrenocortical carcinoma with concomitant myelolipoma. A giant adrenal tumor which was initially nonfunctional was reassessed four years later due to the patient's refusal to treat. The patient was a 48-year-old woman with hypertension and acne lesions on the face. Laboratory findings were consistent with glucocorticoid and androgen hypersecretion. Computed tomography revealed a heterogeneously contrasting mass of 145x118x100 mm with lobular contour and soft tissue areas. The patient underwent left laparoscopic transperitoneal adrenalectomy with three port technique. There were no complications in the perioperative period. The resected specimen weighed 850 grams. Pathological findings showed a combination of myelolipoma-adrenal cortical cancer. In the postoperative period, hypertension improved and the hormone panel was normalized. Postoperative computed tomography and PET-CT showed no residual mass and metastasis. Although imaging is compatible with benign masses such as myelolipoma, coexistence of ACC-myelolipoma should be kept in mind and functional evaluation should be performed.

Keywords: Myelolipoma, Adrenocortical Carcinoma, Cushing Syndrome, Hyperandrogenism

РЕЗЮМЕ

СОЧЕТАНИЕ МИЕЛОЛИПОМЫ С ГЛЮКОКОРТИКОИДНОЙ И АНДРОГЕННОЙ СЕКРЕТИРУЮЩЕЙ КАРЦИНОМОЙ КОРЫ НАДПОЧЕЧНИКОВ: МЕДЛЕННОЕ И ДОБРОКАЧЕСТВЕННОЕ КЛИНИЧЕСКОЕ ТЕЧЕНИЕ

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Описан клинический случай андроген- и глюкокортикоид-секретирующей адренокортикальной карциномы коры надпочечников с сопутствующей миелолипомой. Гигантская атрофированная опухоль надпочечников, от лечения которой отказалась пациентка, была вновь осмотрена четыре года спустя. Лабораторные данные 48-летней пациентки с гипертонической болезнью и угревой сыпью на лице показали наличие гиперсекреции глюкокортикоидов и андрогенов. Компьютерная томография выявила неоднородно контрастную массу размером 145x118x100 мм с дольчатым контуром и участками мягких тканей. Пациентке выполнена левая лапароскопическая трансперитонеальная адреналэктомия по трехпортовой методике. Осложнений в периоперационном периоде не наблюдалось. Резецированный образец весил 850 гр. По результатам патологического исследования выявлено сочетание миелолипомы с раком коры надпочечников. В послеоперационном периоде улучшились показатели артериальной гипертензии, нормализовалась гормональная панель. Послеоперационная компьютерная томография и ПЭТ-КТ остаточной массы и метастазов не выявили. Визуализация показала соответствие опухоли таким доброкачественным образованиям, как миелолипома. Авторы не считают целесообразным исключение наличия адренокортикального рака и рекомендуют проведение функциональной оценки.

რეზიუმე

მიელოლიპომის თანაარსებობა თირკმელზედა ჯირკვლის ქერქის გლუკოკორტიკოიდულ და ანდროგენულ სეკრეციულ კარცინომასთან: ნელი და კეთილთვისებიანი კლინიკური მიმდინარეობა

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საქარიას უნივერსიტეტი, მედიცინის ფაკულტეტი, [1]შინაგანი მედიცინის დეპარტამენტი, ენდოკრინოლოგიის განყოფილება; [2]ენდოკრინოლოგიის დეპარტამენტი; [3]შინაგანი მედიცინის დეპარტამენტი, საქარია, თურქეთი

აღწერილია თირკმელზედა ჯირკვლის ქერქის გლუკოკორტიკოიდ- და ანდროგენ-სეკრეციული ადრენოკორტიკული კარცინომის კლინიკური შემთხვევა თანმხლები მიელოლიპომით. თირკმელზედა ჯირკვ-

ლის გიგანტური ატროფირებული სიმსივნე, რომლის მკურნალობაზეც პაციენტმა ქალმა უარი განაცხადა, განმეორებით განხილული იქნა ოთხი წლის შემდეგ. 48 წლის ასაკის პაციენტი ქალის მონაცემებმა,ჰიპერტონიული დაავადებით და აკნეთი სახეზე,აჩვენა გლუკოკორტიკოიდების და ანდროგენების ჰიპერსეკრეციის არსებობა. კომპიუტერული ტომოგრაფიით გამოვლინდა არაერთგვაროვანი მასა, ზომით 145x118x100მმ, წილოვანი კონტურებით და რბილი ქსოვილების მონაკვეთებით. პაციენტს ჩაუტარდა მარცხენამხრივი ლაპარასკოპიული ტრანსპერიტონეული ადრენალექტომია. პერიოპერაციულ პერიოდში გართულებები არ აღინიშნა. ამოკვეთილი ნიმუშის წონა იყო 850 გრ. პათომორფოლოგიური კვლევის შედეგების მიხედვით გამოვლინდა მიელოლიპომის თანაარსებობა თირკმელზედა ჯირკვლის ქერქის კიბოსთან. ოპერაციის შემდგომ პერიოდში არტერიული ჰიპოერტენზიის მაჩვენებლები გაუმჯობესდა, ნორმალიზდა ჰორმონული პანელი. ოპერაციის შემდგომი ტომოგრაფიით და პეტ-კომპიუტერული ტომოგრაფიით ნარჩენი მასა და მეტასტაზები არ გამოვლინდა. ვიზუალიზაციით დადგენილ იქნა სიმსივნის შესაბამისობა ისეთ კეთილთვისებიან წარმონაქმნთან, როგორიცაა მიელოლიპომა. ავტორები დაასკვნიან, რომ ადრენოკორტიკული კიბოს გამორიცხვა არ შეიძლება და რეკომენდებულად თვლიან ფუნქციური შეფასების განხორციელებას.

ИЗОЛИРОВАННАЯ ПРОФУНДОПЛАСТИКА (ДИФФЕРЕНЦИРОВАННЫЙ ВЫБОР)

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При атеросклеротическом поражении артерий бедренно-подколенно-берцового сегмента глубокая артерия бедра (ГАБ) может длительно оставаться интактной, а ее многочисленные коллатеральные анастомозы способны компенсировать кровоток в голени и стопе. При данном сегменте поражения к основным коллатералям можно отнести нисходящую ветвь латеральной огибающей артерии бедра и прободающие артерии глубокой артерии бедра, которые анастомозируют с верхними и нижними коленными, икроножными артериями, передней и задней поворотными большеберцовыми артериями. При стенозе устья ГАБ, окклюзионно-стенотическом поражении ветвей проксимальной части подколенной, окклюзии подколенной и магистральных артерий голени наступает декомпенсация коллатерального кровотока [5,6,8,10-14].

Профундопластика объединяет хирургические вмешательства, которые восстанавливают просвет начального отдела ГАБ. В зависимости от типа пластичного материала выделяют два вида изолированной профундопластики: аутовенозную, аутоартериальную и с использованием аллопластического материала [1,4,9,12].

Однако у хирургов нет единого мнения относительно показаний к подобным операциям, отсутствует четкий алгоритм действий при подобных вмешательствах, нет регламентирующих критериев относительно выбора способа профундопластики, недостаточно глубоко изучены варианты хирургической анатомии ГАБ. Вышеизложенное диктует необходимость продолжить научные разработки по вопросу хирургических способов лечения хронической ишемии нижних конечностей, когда прямые и эндоваскулярные методы лечения не показаны конкретному пациенту.

Цель исследования - улучшить результаты лечения больных хронической ишемией нижних конечностей на основе оптимизации техники операций на глубокой артерии бедра.

Материал и методы. В течение 6 лет (2014-2019 гг.) в отделении сосудистой хирургии Закарпатской областной клинической больницы им. Андрея Новака, клинической базы ГВУЗ «Ужгородский национальный университет» первично прооперировано 150 больных по поводу облитерирующего атеросклероза бедренно-подколенно-берцового сегмента нижних конечностей. В демографической структуре пациентов значительно преобладали мужчины (90%, p<0,00001). Средний возраст больных составил 61,4±8,7 лет. При этом средний возраст женщин (65,6±7,9) почти на 5 лет превышал средний возраст мужчин (60,9±8,6) на время операции (t=5,77, p<0,00001). Все 150 больных имели окклюзию поверхностной артерии бедра с окклюзионно-стенотическим поражением подколенной артерии и артерий голени.

Ишемия нижних конечностей II степени отмечалась у 11 (7,3%) пациентов, III-А степени - у 63 (42%), III-Б степени - у 55 (36,7%) и IV степени - у 21 (14%). Среди сопутствующих заболеваний преобладали ишемическая болезнь сердца (77,3%), артериальная гипертензия (76,7%), эрозивные и эрозивно-язвенные поражения ЖКТ (52,7%), сахарный диабет (36,7%), хронические обструктивные заболевания легких (32,7%), последствия острых нарушений мозгового кровообращения (20,7%).

Все больные в зависимости от степени распространения окклюзионного поражения ГАБ были разделены на три группы: I группа - с преимущественным поражением устья ГАБ - 99 (66%) пациентов;

II группа - с поражением ГАБ от устья до второй латеральной прободающей артерии - 35 (23,3%) больных;

III группа - с поражением ГАБ до третьей латеральной прободающей артерии - 16 (10,7%) пациентов.

При этом редукция основного ствола у 40% больных составила 60%, у 45% пациентов - от 60 до 90%, у 15% - редукция диаметра оказалась более 90%.