Publications

AnnalsofClinicalandMedical Case Reports

CaseReort

RefractoryHypertensionDuetoPheochromocytomainAType INeutrofibromatosis:SingleCaseReport

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Volume1Issue2-2018

Received Date: 19Aug2018

Accepted Date: 02 Sep 2018

PublishedDate:11Sep2018

1. Abstract

Background: Neurofibromatosis type I (NFI) is a common genodermatosis, with an incidenceof1newcaseto3000-3500livebirths.Describedin1882,itoccursfromgenemutations of the encoding protein called neurofibrinin. NF1 patients are at increased risk for neoplasms.

Aims: Wereportacaseofapatientwithneurofibromatosiswitharecentdiagnosisofpheochromocytoma(PHEO),duetotherarityofthisassociation.1.2.CaseReport:Fourty-sexyearsold femalepatientwithNF1andhypertensionsincetheageof25,developingdifficultyincontrol- ling blood pressure levels. During the investigation, a left adrenal mass was identified in tomography,withahypercapturingpatternonthescintigraphy.Afterpreparation,adrenalectomy wasperformed.Conclusions:ThirtypercentofpatientswithNF1develophypertension,usually primary. A lower percentage may be secondary, usually due to renovascular causes. About 1% of cases hypertension is caused by PHEO. It's a rare neoplasm that occurs between 20 and 50 years of age, with no gender predilection. Refractory hypertension, associated with paroxysms ofheadache,intensesweatingandpalpitationssuggestsPHEO.Thetreatmentissurgical.Long-termfollow-upofNF1patientsiscommonindermatologicalpractice.Withthepresentationof this rare association, we call attention to the adequate follow-up of these patients the presents withhypertension.

2. Keywords

Mesh terms; Neurofibromatosis type1;Hypertension;Pheochromocytoma

3. Background

"Neurofibromatosisisacommonautosomaldominantgenodermatosis of high penetrance, initially described by von Recklinghausen in 1882. Among its subtypes, type I neurofibromatosis (NFI) is the most frequent, with an approximate incidence of 1new case for 3000 to 3500 live births. Mutations of the gene encodingtheneurofibrininprotein,locatedontheshortarm ofchromosome11,locus11.2[1],areidentified.Themainclinical featuresarebrown-milkstains,ephelidestypicallylocatedinthe axillaandinguinalregion(Crowe'ssing),cutaneousandsubcutaneous neurofibromas, Lisch nodules (iris hamartomas), optic gliomasandplexiformneuromas[1].Thesefindingsareincludedin thediagnosticcriteriadefinedbytheNationalInstituteofHealth ConsensusConferencein1988.Classically,patientsarefollowed bydermatologistsbecauseoftheirexuberantcutaneousfindings. Although the therapeutic perspective is poor, follow-up gains importance in anticipating possible malignant transformations. Amongthem,sarcomatoustransformationofplexiformneuromas, suspected by the rapid tumor growth associated with local pain,isthemainconcern.Thisphenomenonoccursinabout3to 5%ofpatientsandisemphasizedintheliterature[1].However, severalotherneoplasmshaveanincreasedincidence.Thesecan be both benign and malignant. Mention may be made of acous- tic neuroma, meningiomas, neuroblastoma, thyroid carcinoma, pheochromocytoma (OGF), skin neoplasms including melanoma[2].

4. Aims

We report a case of a patient with NFI and recent diagnosis of OES,duetotherarityofthisassociation,seekingtocallattention to the importance of the follow-up of these patients.

5. CaseReport

A 46-year-old female patient with NF1 **(Figure1,2and3)**was beingfollowedinouroutpatientdermatologyclinic.Shewasdiagnosed with high blood pressure when she was 25-years-old, butrecentlycardiologywashavingtroubletocontrolhertension levelsdespiteoptimumanti-hypertensivedrugcombination.In

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Citation: AmorimGM,RefractoryHypertensionDuetoPheochromocytomainATypeINeutrofibromato-sis:SingleCaseReport.AnnalsofClinicalandMedicalCaseReports.2018;1(2):1-3

this context, during investigation, she presented a left adrenal massonaCT-exam.**(Figure4)**Anadditionscintigraphyshowed hypercaptationintheupperregionabovetheleftkidney.Witha probable diagnosis of PHEO, she was hospitalized to terminate investigation,clinicalcompensationandsurgicaltreatment.Vid-eolaparoscopicadrenalectomywasperformed,withoutcompli-cations. Patient is still being followed, now with 6 months post treatment,withnoevidenceofrecurrenceofthedisease,requir-ingnomoreanti-hypertensivetreatment.

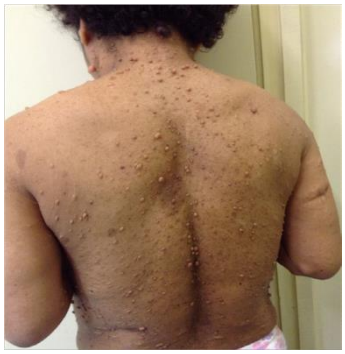


Figure1: Multiplecutaneousneurofibromasonherback.

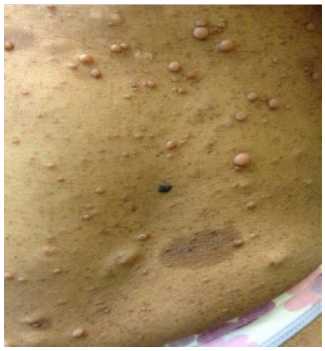


Figure2: Anexampleofa*CaféauLait*(brown-milk)spot,alongwithneurofi-bromas.

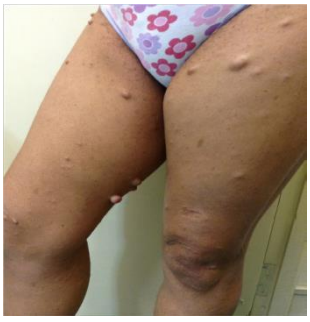
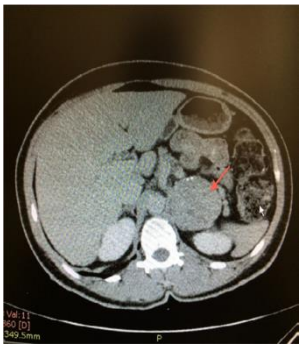


Figure3: Multiplecutaneousneurofibromasonherlegs.



Picture4: Amassinthetopographyoftheleftadrenalgland,evidencedby the CT examination.

6. Discussion

NFIisknowntobeadiseasewhosemanagementrequiresamul-tidisciplinary team, being fundamental its knowledge in several areas, even at the primary care level, in view of its significant prevalence[1].However,ingeneral,thepatientsareatleastaccom-panied by the dermatologist because of the exuberance of the cutaneous lesions. The importance of follow-up, since effective treatment is not available, lies mainly in the higher incidence of tumors,includingmalignantbehaviorones.Acohortof448pa- tients with NFI, with a follow-up of 5705 patients / year, found a 2.7-fold higher risk of malignant neoplasia in relation to the general population. It is postulated that the mutation involved inactivateNF1geneswithtumorsuppressoractivity,possiblyex-plaining the increased frequency of neoplasias [2].

About 30% of NFI patients develop hypertension, and it is therefore essential that these patients have their blood pressure checked.Mostcasesareprimaryoressential,butinalowerper-centage it may be secondary to a renovascular component and, even more uncommonly, can be justified by the presence of PHEO (about 1% of cases) [3].

PHEOcorrespondstoarareneoplasmofchromaffincells, with prevalence in the general population of about 2 to 8 cas-es:1,000,000.Itaffectspatientsbetween20and50yearsofage, and there is no predilection for sex. Ninety percent of the cases are benign, unilateral, located in the adrenal gland [4,5]. About 10% of them are family members associated with dominant au-tosomaldisorders,suchasNF1.Tuberousclerosis,Stuge-Weber syndrome and Carney syndrome are also of dermatological im-portance[5].

Refractoryhypertensionassociatedwithparoxysmsofheadache, intensesweatingandpalpitationssuggestFEO[4].Diagnosis involves the measurement of serum and urinary metanephrines and catecholamines, as well as magnetic resonance imaging or scintigraphyforlocalizationofthetumor.Surgicalexcisionisthe appropriate treatment and, in general, it is via laparoscopic surgeryafter adequate preoperative preparation [4,5].

Screening for PHEO in patients with NF1 is generally recom-mended at the onset of hypertension [6,7]. However, a study in patients with these two conditions showed that, in most cases, there was no change in blood pressure. Thus, the suspicion of PHEO should not be restricted to the onset of hypertension, but alsotoothersignsandsymptomsthatmayindicatethepresump-tionofthisdiagnosis[4].However,theplantoscreenonlysymp-tomatic patients has led to an underestimation of the prevalence in these individuals. Thus, screening for PHEO in patients with NF1isrecommendedforallpatientsover40yearsofagethrough

the quantitative analysis of metanephrines and imaging tests suchasCTorRM[8].Additionalexaminationsbeforepregnancy and any surgeries are also recommended, although there is still a need to determine the cost-benefit of this strategy [9].

7. Conclusions

Among genodermatoses, NF1 is the most common, so the care of these patients is common in the dermatological practice. In addition,thesurvivalofitspatientsisclosetothegeneralpopulation, in such a way that these patients will be followed in the long term. We report this case due to the rarity of this associationwithPHEO,andtheneedforadequatefollow-upofthese patients.

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