Case report

A case of reversible dilated cardiomyopathy due to acromegaly with partial empty sella

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KEYWORDS

Acromegaly
Partial empty sella
Reversible DCM

ABSTRACT

Acromegaly has several cardiovascular manifestations of which cardiomyopathy (CMP) and hypertension (HTN) are important and contribute to the increased mortality associated with the disease. Both these manifestations are reversible with treatment. However, very advanced CMP with severe systolic dysfunction has low likelihood of reversal. The reversibility is higher in young population and decreases as age advances. Also, the time required for these manifestations to resolve is about 1 year. Here, we describe a case in which HTN and advanced heart failure resolved in an aged patient within a very short span of 2 months from the time of presentation.

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Introduction

Acromegaly is an endocrine disorder characterised by growth hormone (GH) excess. The usual presentation of the disease is with enlargement of soft tissues and coarsening of the facial features. The disorder has several cardiovascular manifestations including hypertension (HTN) and cardiac dysfunction. In a patient presenting with cardiac failure, it is important to recognise this condition as the underlying aetiology as it is potentially reversible. The cardiovascular system (CVS) manifestations of the disease are reversible, particularly so, if the patient is young and the condition is recognised and treated early. The magnetic resonance imaging (MRI) pituitary shows adenoma in about 98% of the patients.

Here, we present a case of acromegaly presenting as dilated cardiomyopathy (DCM), whose MRI pituitary showed partial empty sella suggesting that either the patient had primary partial empty sella with tumour overgrowth in sella or spontaneous intra-tumour infarct leading to formation of secondary partial empty sella. The patient, although elderly, had an unusual rapid resolution of HTN and improvement in cardiac functional status following starting of therapy.

Case report

A 60-year-old-male patient presented with complains of breathlessness on exertion, oedema feet and orthopnoea for the last 1 month. There was no expectoration or chest pain. The past, personal and family histories were unremarkable. There was no past history of ischaemic heart disease. Examination of vitals showed a blood pressure (BP) of 210/110 mmHg in both upper limbs. General examination revealed coarse facial features, raised jugular venous pressure, and oedema feet. Tachycardia, S3 gallop and bibasilar rales were the findings on systemic examination. The electrocardiogram (ECG) showed sinus tachycardia and chest radiograph revealed cardiomegaly with pulmonary oedema. The routine biochemical investigations were normal except for a raised serum creatinine of 2.3 mg% (114.88 μmol/L). An echocardiographic evaluation was suggestive of DCM with an ejection fraction (EF) of 20%. Because of the presence of coarse facial features, the patient was evaluated for acromegaly with fasting and post-glucose GH levels. The fasting serum GH level was 2.1 ng/mL (2.1 μg/L) and post-glucose 1.2 ng/L (1.2 μg/L). Both the values were significant. Based on these biochemical findings, the patient was diagnosed as having acromegaly and was subjected to MRI pituitary. This was suggestive of partial empty sella. There was no clinical or other evidence of raised intracranial tension, pressure effects of tumour.

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Considering acromegaly, the patient was treated with bromocriptine and drugs for HTN and cardiac failure (initially diuretics followed by diuretics with amlodipine once the pulmonary oedema resolved). During hospital stay, his BP never dropped below 160/100 mmHg but his symptoms of heart failure (HF) resolved. He was discharged with bromocriptine and other drugs. At 1 month follow-up, he had become normotensive and the doses of antihypertensive drugs were decreased. At 2 months, his BP was 100/68 mmHg and his serum creatinine reduced to 1.1 mg%. He was put off all drugs. At further follow-up, he was normotensive without any clinical signs or symptoms of HF.

Discussion

Acromegaly is an endocrine disorder characterised by excess secretion of GH. Most of the cardiovascular effects of this disorder are considered to be due to high circulating levels of IGF-1 (insulin-like growth factor). These effects are important because they are responsible for the majority of morbidity and mortality associated with this disorder. It is important to recognise this disorder because the CVS effects can be reversed or at least progression halted with effective treatment.¹ Treatment with both, somatostatin analogues and GH receptor blockers has been reported to be effective. Usually the resolution of cardiac effects starts with regression of ventricular hypertrophy. The effect on cardiac mass is evident after about 1 year of treatment and this is followed by improvement in diastolic and systolic function.² Young patients with short disease duration were more likely to reverse the acromegalic cardiac changes after 1 year of treatment.³ In this case, our patient had resolution of HTN and also of the symptoms and signs of HF in just 2 months of treatment with bromocriptine. This resolution persisted even after discontinuation of treatment suggesting that the disease had actually come

under control. It is likely that the partial empty sella seen on MRI pituitary could represent a spontaneous intra-tumour infarct. Alternatively, it could represent a partial primary empty sella with tumour growth in the remaining tissue. The second possibility seems less likely because had it been the case, then discontinuation of bromocriptine would be likely to result in resurgence of disease activity. Also, spontaneous tumour regression due to tumour infarct would be more likely to achieve a biochemical control of the disease better than bromocriptine. Therefore, the first possibility seems more likely. Therefore, it is possible that regression of cardiovascular changes can occur quite rapidly even in elderly individuals with systolic dysfunction.

Conclusion

Through this case report, we would like to highlight the following aspects.

1. Rapid resolution of cardiac changes of acromegaly can occur.
2. Resolution is possible in elderly patients with systolic failure.

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