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Memory lapses in a 39-year-old Type 2 diabetic man.

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2. Objective: To assess if type 2 diabetes mellitus or stress are a cause of cognitive impairment in young individuals.

الهدف:

تقييم ما إذا كان داء السكري من النوع 2 أو الشدة النفسية هي سبب ضعف الإدراك , (النسيان) لدى الشباب.

الملخص:

في مجال الطب ، ليس من غير المألوف أن تصادف صغارًا يعانون من مشاكل في الذاكرة إنها المقاربة لمشاكل الذاكرة التي ستساعد في الكشف عن السبب الأساسي. سيتم تحديد الأساس الاستقصاءات من خلال تاريخ مفصل واستنباط عوامل الخطر الأساسية للوصول إلى العلاج المناسب. فقدان الذاكرة أو هفواتها غير شائعة بشكل عام في فئة الشباب البالغين ، ولكن إذا أثرت مخاوف ، فستحتاج إلى البحث في كل من السبب العقلي و الاستقلابي. سيكون الدعم الأساسية هي استكشاف نمط حياة الفرد وتمييز ما إذا كان هناك مرض كامن يوحى بإصابة دماغية محتملة يمكن أن تكون سببًا لضعف الذاكرة أو لتقييم ما إذا كانت هناك مشكلات تتعلق بالصحة العقلية والتي هي الدعامة الأساسية للمشكلة المطروحة .



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3.1 Abstract

In the field of medicine, it is not uncommon to come across young individuals with memory concerns

It is the approach to the memory concerns which will help uncover the underlying cause.

The baseline for investigation will be dictated by an elaborate history and eliciting the underlying risk factors to point one to the appropriate line of management.

Memory losses or lapses are generally uncommon in the young adult population, but if a concern is raised then needs both mental and metabolic work up.

The mainstay will be to explore the lifestyle of the individual and discern if there is underlying history suggestive of possible brain insult which can be the cause of cognitive impairment or to assess if there is perhaps mental health issues which are the mainstay of the problem at hand.

In this case study it was found that although the patient's main concerns were based on his memory loss being a diabetic, a full panel of tests were conducted which came back normal. As a sequelae to the management a mental health work up was undertaken. The actual cause of the memory loss was found to be General Anxiety disorder.



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Keywords 3.2

Memory loss, type 2 diabetes mellitus, anxiety, depression

4. Case Study

4.1 Introduction

In the case studied in this article, the history revolves around a young 39-year-old Indian male, who was diagnosed with Type 2 diabetes mellitus about 2 years ago. He reported episodes of confusion and memory lapses whilst driving stating that he forgot where he was on multiple occasions. This case study explores the methodology adopted to discern the underlying cause of his memory losses making a note of the elaborate metabolic profile and thereafter the mental health issues faced by the patient .

4.2 Main Body

4.2.1 Patient Characteristics

He is a driver of a private car as a professional, working in Qatar whilst his main family is overseas in India. He lives under contract of 2 years with visit to his home country allowed at the end of the 2-year period for up to 2 months if he shows intent of continuing with the same employer.



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He denies any recent fall, hit to his head, or loss of consciousness. Denies any loss of power or sensation, no speech or visual changes, permanent or transient.

His metabolic profile showed that he was a well-controlled diabetic with his recent HBA1c, 3 months back, of 7.4.

Compliant with medication, non-smoker and non-alcoholic.

His cholesterol, renal panel and LFTS all within normal.

On initial consult he denies any mental stressors.

4.2.2 Initial Clinical Impression

Given his chronic disease of type 2 diabetes and his metformin use for control, it was initially thought that perhaps it may a deficiency of B12 or worsening of his diabetes leading up to small vessel ischemic changes and his resultant cognitive decline. Hence full workup was initiated with blood tests to rule out any contributing metabolic indices to his memory loss.

4.2.3 Findings of his blood tests

All tests came back normal with a check being conducted for CBC, RFTs, LFTs, HBA1c, HIV, Syphilis, TFTs, B12, Folate and Vit D.



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4.2.4 Psychosomatic examination

On revisit a detailed MMSE was conducted keeping in mind his educational background and a complete physical examination was conducted to rule out any sensory neural deficits.

His MMSE was 29/30 with one point lost to subtraction only.

The general psychological assessment showed that he maintained good eye contact, the content and relevance of speech was normal, there was no problems with recall and retention of new information. Denied any suicidal or homicidal ideation. He was happy with his work having lived with the same sponsor for 17 years.

He has 2 kids aged 10 and 11 with no domestic issues with wife or parents. Generally, states he is a happily married man. Does admit to anxiety but cannot point out the reason for it. He admits to multiple awakenings at night for no reason and difficulty falling to sleep. Screen use with mobile is excessive with all free time being dedicated to mobile internet surfing. He also states having some weird dreams but does not volunteer much to the content of the dreams he sees.

4.2.5 Final diagnosis

After this detailed psychosocial history was undertaken a diagnosis of masked depression and Generalized Anxiety Disorder was made. The patient was advised



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CBT and relaxational strategies with oral antidepressant and follow up planned at 4 weeks.

5. Discussion/Conclusion:

Diabetes is a systemic disease as it affects various body systems. Adverse effects of diabetes on cognitive system and memory disorders have been noticed by researchers for a long time (Leibson Cl et al.,1997)(Curb JD et al.,1999)(Oxford dictionaries,2016)

As outlined in the case above, the chances of metabolic problems leading to conditions like early onset dementia in a young male are low, but possible.

Mild cognitive impairment all the way up to dementia is a known association with Type 2 diabetes mellitus (Verdile G et al.,2015) Patients who are type 2 diabetic have a 10% greater rate of cognitive decline than the normal population

Recent research collaboration between Mayo Clinic and Shanghai was reported in 2015. In this study, involving a considerable number of patients, the effect of diabetes on the cognitive function of patients was strongly evident. This was, of course, irrespective of patients' gender, age and possible cardiovascular risk factor (Zhao Q et al.,2015)



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In one study, daily acute glucose fluctuation was an independent factor for cognitive dysfunction in T2D (Rizzo MR et al.,2010)

However, it is imperative to look at the risk factors which can contribute to such findings. The history must include his personal life, lifestyle, any diagnosed chronic diseases, smoking and alcohol status. Access to and use of recreational drugs, and the psychosomatic history.

5.1 Memory loss and cognitive impairment etiology (Budson AE et al.,2016)

Degenerative disorders including

Alzheimer's disease

Vascular dementia

Depression and anxiety

Medication side effects

Disturbed sleep

Hormones

Metabolic disorders

Diabetes

Alcohol abuse

Lyme disease



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Hippocampal sclerosis

Subdural and epidural hematomas

Vitamin B12 deficiency

Seizures

HIV associated neurocognitive
disorder

Hashimoto's encephalopathy

HIV: Human immunodeficiency virus.

It is imperative that after conducting a baseline blood check a psychological review of his mental status be conducted for the patient and be revisited on each consult.

Prolonged exposure to stress is now recognized as a condition that can induce deleterious effects on brain structure and cognition (McEwen BS.,1999)(McEwan BS.,2002)(McEwan BS.,2002) and increase the risks of developing neuropsychiatric disorders (Mazure CM.,1995)(Heim C, Nemeroff CB.,1999)

As highlighted in this case, upon initial interview the patient denies any stressors, but on revisit to discuss his bloodwork, he admitted to mental stressors despite being unable to discern the reason for them.



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Looking at the living conditions of this male, who has been abroad for 17 years with a chance to visit his family every 2 years for 2 months , in itself tells us about the likely pressure and loneliness he can feel which are possibly now catching up with him.

He may enjoy a good professional relationship but not having the human interaction with his personal family is perhaps of utmost significance.

Starting both CBT and considering pharmacological intervention, plus scheduling regular visits to discuss his issues will be beneficial.

6. Conclusion

Memory loss if seen in a young adult should always trigger the physician to explore the mental health side of things but should not be limited to that.

To be on the safe side the full dementia profile should be ordered and reviewed before dismissing any rectifiable metabolic issues. If the mental health alone does not explain the reason for the memory loss a neuro psychiatry referral at the secondary or tertiary level should be initiated for completion of management protocol



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