


Case report: cause of hyperprolactinemia in an elderly patient

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Abstract

Irritation to the chest wall due to herpes zoster virus (HZV) infection is one of many potential underlying causes of hyperprolactinemia. Hyperprolactinemia can lead to various different symptoms including anorgasmia. It is important to identify any sexual dysfunction, but also any other symptoms of hyperprolactinemia, in elderly patients during medical history taking and not to assume that elderly people are sexually inactive. Anorgasmia and any other sexual dysfunction in elderly can have an impact on their mental health and may even lead to depression and anxiety.

INTRODUCTION

Hyperprolactinemia is defined as excessive prolactin levels in the blood. Prolactin is primarily secreted from the anterior pituitary gland. The endocrine function of prolactin is to enable lactation.

In women of reproductive age, hyperprolactinemia may lead to secondary amenorrhea, oligomenorrhea and infertility. Other symptoms of hyperlactatemia include lactorrhoea and anorgasmia. However, the majority of hyperprolactinemia cases remain asymptomatic.

Prolactin secretion from the anterior pituitary gland is primarily controlled by hypothalamus. Lactotrophs exhibit D2 receptors, which can be stimulated by dopamine. Dopamine inhibits prolactin secretion by binding to D2 receptors. Thyrotropin releasing hormone from the hypothalamus stimulates the release of prolactin.

Chest wall irritation (e.g. HZV infection or surgery) can lead to hyperprolactinemia. Other causes include prolactinoma, antipsychotic medication, anti-hypertensive treatment and renal failure amongst others, but some are idiopathic.

The mechanism in which herpes Zoster infection over the chest can cause hyperprolactinemia is by nerve stimulation that leads to prolactin release.

The prevalence of hyperprolactinemia is 0.4% in the general population and most cases are asymptomatic [1].

CASE

A 98-year-old lady living in a residential home was referred to mental health services by her GP following

concerns raised by her carers who reported she was low in mood. Her carers additionally suspected that she was planning on taking an overdose of paracetamol tablets.

The duty mental-health professional who assessed the referral for patient X had conducted a visit to her home. In the assessment, patient X disclosed that she was embarrassed to reveal the reason behind her mental health deterioration, despite this she was willing to talk about it because she wanted to find a solution to her problem. Patient X was started on the antidepressant Mirzapamine for her low mood; however, her mental health did not improve. She reported continuing symptoms that could be attributed to a depressive episode including insomnia, reduced appetite and an inability to relax due to feeling tense all the time.

Patient X revealed that from the time she started developing shingles a few weeks earlier she had been unable to reach orgasm by masturbation, but that she still had intense sexual urges. She explained that her anorgasmia had caused her anxiety and depressed mood. Patient X's distress had led her to becoming suicidal and to wanting to harm herself by overdosing on tablets or stabbing herself. She was then admitted to an inpatient mental health unit due to her high risk of self-harm.

She was not responding to the antidepressant medication that was started. Her inpatient medical team conducted investigations to identify potential organic causes for patient X's anorgasmia.

Interestingly, her admission blood tests revealed a raised prolactin level of 1068 ml/u. Her only symptoms attributed to hyperlactatemia were increased facial hair

Received: August 18, 2021. Revised: December 15, 2021. Accepted: November 23, 2021

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and anorgasmia. She also had pain over her chest which was believed to be due to her herpes zoster infection. There was no lactorrhoea or breast engorgement noted on examination.

Recent blood tests indicated that her thyroid function, liver function, kidney function and full blood count were within the normal range. Magnetic resonance imaging (MRI) brain scan was ordered to exclude a prolactinoma, and this was normal. She also had several physical examinations done of her genital area and pelvis to exclude a herpes infection causing sexual dysfunction. The results of these examinations were unremarkable. On physical examination of her chest, an erythematous rash with blisters was evident over her right breast, extending to her nipples. She also complained of neuropathic pain. The distribution of the rash and clinical picture was in accordance with a recent herpes zoster infection. No Breast mass was detected.

A medication review was made to identify any pharmacological causes of the raised prolactin levels. Patient X was on regular amlodipine for hypertension which is not known to raise prolactin levels. Because of her psychotic symptoms, patient X had been started on aripiprazole, an antipsychotic medication that is not known to cause significant raised prolactin levels (and is sometimes used as an adjunct to lower prolactin levels caused by other antipsychotics that cause raised prolactin).

After conducting the aforementioned investigations for raised prolactin levels, it was concluded that the patient's hyperprolactinemia was most probably secondary to her recent herpes zoster infection/shingles, which was fairly extensive, involving the patient's right breast and extending all the way to the nipple [2].

As the patient's herpes infection improved with treatment, patient X's prolactin levels also normalized gradually and her inability to orgasm resolved.

DISCUSSION

Doctors should consider the more unique possible causes of the raised prolactin levels when treating a patient with hyperprolactinemia. Any chest wall irritation can cause hyperprolactinemia due to the stimulation reflex. Examples of some of these causes are chest wall trauma, burns, surgery and herpes zoster infection.

It is important to consider elderly patient's sexual wellbeing, especially if hyperprolactinemia has been detected as this may have a negative impact on their sexual health. One possible cause of sexual dysfunction is hyperprolactinemia and patients with such problems should have their prolactin levels checked. Once hyperprolactinemia is diagnosed, it is important to exclude any pituitary prolactinoma excreting excessive prolactin using MRI brain imaging. Prolactinomas are the commonest types of pituitary tumours [1].

Hyperprolactinemia may be a result of pregnancy, lactation, chest wall stimulation, stress, sleep, epileptic seizures, liver cirrhosis and chronic renal failure amongst other causes [2, 3].

The patient's medications should be reviewed as certain medication groups such as antipsychotics, antidepressants as well as antihypertensive medications can cause hyperprolactinemia. Amongst these medication groups, antipsychotics are the primary pharmacological cause of hyperprolactinemia [4]. Therefore, it is appropriate for clinicians to start psychotic patients with known hyperprolactinemia on antipsychotic medication that have a safer profile when it comes to prolactin levels. The consultant responsible for patient X's care appropriately chose the second-generation antipsychotic Aripiprazole because of the fact that the prolactin levels are less likely to be affected by this medication.

In patient X's case, the only explanation remaining for her hyperprolactinemia was the herpes infection across her right breast. The onset of her sexual dysfunction also coincided with the onset of her herpes infection.

The cause of this 98-year-old patient's mental health deterioration was her anorgasmia, which was a result of hyperprolactinemia caused by irritation to her chest wall from a recent herpes infection [5].

ACKNOWLEDGEMENT

I am grateful to staff at Scadbury ward, Oxleas NHS Trust, for their safe and appropriate management of the patient.

CONFLICTS OF INTEREST

None declared.

FUNDING

No funding was obtained.

ETHICAL APPROVAL

Ethical approval not required.

CONSENT

Consent has been gained, and consent form was signed by the patient.

GUARANTOR

Dr Sarah Moslehi is the guarantor of this case report.

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