

## Insulinoma, factitious hypoglycaemia or murder?



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Today's diabetes world is fast-moving and exciting; knowledge is accumulating at an astonishing rate, new discoveries and understanding lead to new ideas and innovations in treating, managing and preventing diabetes. However, there's

nothing new under the sun. To help understand the present, it sometimes helps to examine the past.



Tattersall's Tales will enable readers to do just that. In every issue, Robert Tattersall, renowned diabetes sage and guru, will consider an aspect of diabetes and place it in a suitable historical context. Research, treatment, people and products will all feature.

In this instalment, Robert Tattersall discusses the misdiagnosis of factitious hypoglycaemia or homicidal administration of oral hypoglycaemic agents as an insulinoma.

**F**ew diabetologists retire without having misdiagnosed factitious hypoglycaemia or homicidal administration of insulin or oral hypoglycaemic agents. I was reminded of my errors by a recent paper from New Zealand (Manning et al, 2003).

The first insulinoma was reported from the Mayo Clinic in 1927 (Wilder et al, 1927). The patient was a 40-year-old surgeon with an 18 month history of attacks of faintness, confusion and stupor which had become more frequent and severe. Even a short fast resulted in a coma and his wife had 'to watch when he slept and put candy into his mouth at the first sign of unusual behaviour'. At operation an islet cell carcinoma with liver metastases was found and an extract of the metastases lowered the blood sugar of rabbits. The first case cured by operation was in 1929 (Howland et al, 1929). The patient had a 6 year history of minor attacks in which she became dazed and fatuous and major ones when she behaved as if drunk and ended with a grand mal fit.

The first report of factitious hypoglycaemia was in 1945 when a female patient was investigated for 2 months. The diagnosis was proved by adding typhoid vaccine to her bottle of insulin, thus producing a different kind of reaction (Conn et al, 1946). In 1947, three more factitious cases were reported. One non-diabetic woman had seven abdominal explorations from 1939–44 before a bottle of insulin was found hidden in her room and she 'grudgingly admitted that sometimes she had given herself unneeded insulin' (Rynearson, 1947).

I saw my first case of factitious hypoglycaemia in the US in 1973. A 17-year-old nurse from another state was uninsured and the only way she could get treatment was in our unit which had research funding. She had only had symptoms for 3 weeks but was having increasingly frequent and severe comas. This was in the days of animal insulins and a negative test for antibodies was thought to rule out the possibility of self administration of insulin. In spite of an uneventful 72 h fast, the severity of her symptoms led to a fruitless exploration of the pancreas. A repeat test for insulin antibodies (which take 6 weeks to develop) was positive during her convalescence and she admitted self-injecting. My impression was that the diagnostic process was rushed (uncharacteristically for the unit) due to the patient's lack of insurance.

The first proven case of murder by insulin was in 1957. The perpetrator was a male nurse and the victim his wife (Birkinshaw et al, 1958). Since then, 52 cases have been reported; it is noteworthy that of the 43 alleged perpetrators, two were physicians and 26 were nurses, paramedics or carers (Marks, 1999).

The New Zealand case involved a 47-year-old physiotherapist admitted in a hypoglycaemic coma. She was discharged after 5 days to the care of her psychiatrist husband but readmitted 4 days later again in coma. On both occasions she needed a prolonged infusion of dextrose to maintain normoglycaemia. High C-peptide levels ruled out administration of insulin and a spiral CT of the pancreas was normal. A blood test for sulphonylureas was negative but was later found to lack sensitivity. The severity of her symptoms led to a laparotomy and distal pancreatectomy; no insulinoma was found. A 36 h fast did not provoke hypoglycaemia and she was sent home. Twelve days later she was found dead in bed. Her husband, who was convicted of her murder, had written prescriptions for 3 500 mg of glibenclamide, traces of which were found in a blood sample taken a day before death and in the kitchen waste disposal unit.

I suggest the following lessons can be learned from this tragic case:

- Beware the patient with 'an insulinoma' who is a doctor, nurse, has medical relatives or relatives with diabetes. In these cases factitious or malicious hypoglycaemia should be the provisional diagnosis.
- One of the striking features of insulinomas is that attacks are episodic and the first is usually precipitated by hard labour or fasting. Patients often have amnesia but history from a spouse will usually uncover suggestive episodes months or years earlier. Unfortunately, taking a history from a homicidal spouse will not help!
- There is a lot to be said for a 72 h fast, provided it is carefully supervised and the samples sent to the lab are not measured with a meter.
- If the initial tests are negative, do not discharge the patient with a meter and instructions on how to treat hypoglycaemia. Retake the history with the possibility of factitious or malicious hypoglycaemia in mind.

While we are on the subject of poisoning, have you considered the possibility that the old lady admitted with vomiting and diarrhoea is being poisoned with arsenic or antimony? Quite a thought!

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