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Case Report

Nursing Section

Insulinoma: A Diagnostic Challenge!

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ABSTRACT

Insulinoma is a common tumour arising from islets of Langerhans. Patients with insulinomas present with neuroglycopenic symptoms such as repeated episodes of headache, blurred vision, diplopia and lethargy especially with fasting or exercise. Seizures, coma and permanent brain damage results from severe hypoglycaemia. The present report is of a female who got admitted with the chief complaints of swaying on to one side since one month and slurring of speech, seizures and becoming drowsy for four days. Her laboratory values indicated repeated episodes of hypoglycaemia in spite of repeated administration of intravenous dextrose. A CT scan of pancreas revealed insulinoma and was treated by surgical resection. After surgery, patient's symptoms subsided and she recovered well. The clinical manifestations of insulinoma mimic features of diabetes mellitus and neuropsychiatric disorders, hence a thorough investigation needs to be done to confirm the diagnosis.

Keywords: Hypoglycaemia, Neuroglycopenic symptoms, Pancreatic neoplasm, Pancreatic tumour, Resection

CASE REPORT

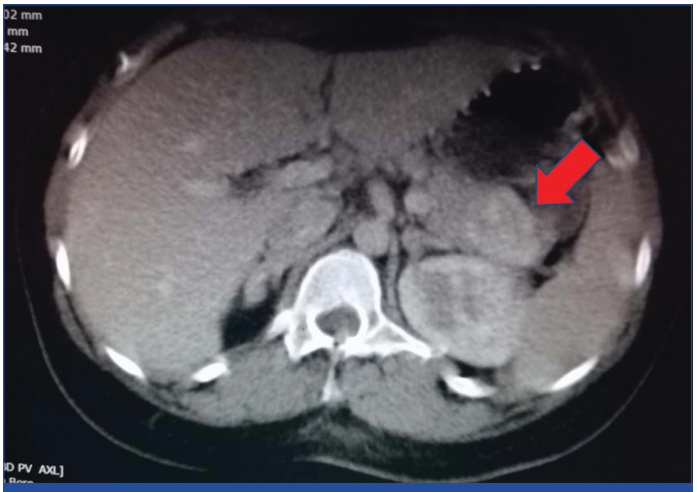
A 34-year-old female, homemaker by occupation presented to the surgical department with the chief complaints of swaying to one side since one month and slurring of speech, seizures and becoming drowsy for four days. History revealed episodes of unconsciousness and pseudoepilepsy. She was diagnosed to have left craniopontine angle tumour, that is, left vestibular schwannoma which was removed by craniotomy and excision. She also had a history of dissociative disorder for the last five years, which was treated by antipsychotic drugs. A lump in the left breast was found two years ago, which was treated by lumpectomy. A year ago, she suffered from left gluteal abscess, treated by incision and drainage of the abscess and antibiotic therapy.

Presently, upon admission, vital parameters were normal. Glucometer Random Blood Sugar (GRBS) was consistently low (25-50 mg/dL) despite administering 50% dextrose and continuous administration of dextrose normal saline. Complete blood count revealed increased WBC 14,700 cells/mm^3 and increased ESR 46 mm/hour. Renal function test and liver function tests were normal. Fasting insulin (66.02 IU/mL) and fasting C-peptides (7.7 ng/mL) were abnormal which were indicative of insulinoma.

Plain and contrast CT scan of abdomen and pelvis showed a well-defined isodense heterogenous enhancement in the region of the tail of the pancreas and another similar heterogeneously enhancing lesion present near the distal body with no calcification/ductal dilatation. Based on the above reports the possibility of the pancreatic neuroendocrine tumour (insulinoma) was considered [Table/Fig-1].

Preoperatively, nursing assessment data revealed two episodes of hyperthermia ranging from 102-103° F, pulse rate of 70 to 80 beats/minute, respiratory rate of 18 to 24 breaths/minute and blood pressure of 100/70 to 120/80 mm of Hg. She had productive cough for two days. Respiratory auscultation revealed bilateral basal crepitations. Her GRBS was monitored every 2nd hourly, she had repeated episodes of hypoglycaemia (GRBS 25-50 mg/dL) and later maintained between 150-160 mg/dL. IV fluid DNS was administered, kept NPO and intake output chart was maintained. Fever was managed by constant monitoring of temperature, tepid sponging, and antipyretic medications.

She underwent exploratory laparotomy and enucleation of insulinoma. The abdomen was opened in layers. Gastrocolic omentum was opened and the lesser sac was entered. Adherence to the pancreas from the posterior surface of the stomach was released. Two encapsulated tumours were seen which were dissected and removed in total. Small bleeders from the body of the pancreas were sutured.



[Table/Fig-1]: CT scan showing pancreatic neuroendocrine tumour.

Post-operatively, her vital signs were stable. Wound assessment revealed a healthy wound. Surgical site dressing was done using aseptic techniques. Intravenous antibiotics were administered. Pain assessment was done and intravenous analgesics were administered. Drainage from the surgical site was monitored every 2nd hourly and patency of drainage tubings was maintained. Propped up position was provided and deep breathing, thoracic expansion, incentive spirometry, and bronchodilator nebulizations were given. GRBS was checked every two hourly to rule out the complications such as hypoglycaemia and hyperglycaemia related to enucleation of insulinoma.

Patient was anxious hence she was encouraged to ventilate her feelings. Significant family members were allowed to get involved in patient care activities such as feeding, grooming etc. She recovered completely after one week and got discharged. She was followed up in outpatient department after 15 days. The histopathology report showed synaptophysin positivity in tumour cells and Ki67 index of 1%.

DISCUSSION

Insulinomas are rare tumours of the pancreas. The insulin which is released in excess leads to fasting hypoglycaemia. It is manifested as confusion, loss of consciousness, convulsions and coma [1]. Usually, the time period between symptom onset and the definitive diagnosis takes around 37 months (range of zero to fourteen years) [2].

The insulinoma is diagnosed biochemically by means of elevated insulin, low blood glucose level, pro-insulin and C-peptide levels [3]. Diagnosis is usually confirmed by localisation of tumour with medical imaging technique [4]. Proper diagnosis, localisation of the tumour and the appropriate management, i.e., surgery are keys to management. Size and location of the tumour are important to decide upon the type of surgery [5]. A small and solitary nodule, which is not invading the pancreatic bile duct can be resected by enucleation surgery [6].

There are similar reports where insulinoma cases were misdiagnosed. A 61-year-old hypertensive and steatohepatitis patient presented with syncope, tonic clonic seizures, sweating and anxiety. Routine investigations showed that it was alcohol withdrawal and managed accordingly. When patient got readmitted with similar episodes, further investigations were carried out which revealed insulinoma [7]. An adolescent female of 15 years reported to the hospital in an unresponsive state. She had diaphoresis and there was no tonic clonic activity involved. Investigations revealed hypoglycaemia and she was treated with IV dextrose and blood sugar levels became normal and she got discharged. Again she reported to the hospital with same symptoms where MRI was done to confirm the diagnosis and it was revealed to be insulinoma [8].

CONCLUSION

As insulinoma is a rare case and the symptoms mimic other conditions, it remains a diagnostic challenge to practitioners when the patient shows symptoms of hypoglycaemia. Many times it will lead to misdiagnosis due to the presenting neuroglycopenic symptoms. As laboratory workup and other diagnostic measures are not so evident at the initial stages, it may take many months to years together to come to a proper conclusion of pancreatic insulinoma. The effective and safe surgery depends largely upon accurate preoperative localisation. Hence, accurate history, combined with physical examination findings and laboratory and other radiological diagnostic measures should be considered to rule out insulinoma so that timely resection of the tumour can be done and a better prognosis can be expected.

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