# Pediatric insulinoma : A case report

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## Background:

Insulinomas are functional neuroendocrine pancreatic tumor rarely in pediatric. It is difficulty diagnosis and surgery is the gold standard of treatment. The clinical presentation includes neuroglycopenic symptoms such as loss of consciousness, lethargy, confusion, dizziness, recurrent seizures, and coma. Other symptoms are related to the catecholamine response, such as palpitations, tachycardia and hypertension, as well as hunger, weight gain, epigastric pain, or vomiting.
A case with pediatric insulinoma was reviewed including clinical presentation, laboratory datas and outcome.

## Clinical Data:

A 11-year-old boy was referred from private hospital due to hypoglycemia. He has an 1-month history of increased hunger, increased 10 kilograms of weight, confusion and fainting after fasting 10 hours.

## Physical Examination:

An obese Thai boy,**(Figure 1)**his height was 71 kg. (the 50th percentile) and his weight was 145 cm (the 90th percentile). He had no cushingoid appearance, no hirsutism, normotension. Systematic examinations were normal

## Laboratory investigations:

Initial investigation from private hospital showed low blood glucose (BS 10 mg/dL) and return to normal after giving intravenous glucose bolus.

We performed fasting study and found hypoglycemia 6 hours after fasting. Blood sample was taken for analysis and found low blood glucose (37 mg/dL) with high insulin level (10 uU/mL) and normal cortisol level.

- An abdominal contrast-enhanced computed tomography scan show 2 small well-demarcated heterogeneously enhancing lesions (0.9x1.2 cm and 0.9x1.1 cm ) within the body and tail of pancreas without dilatation of pancreatic duct. **(Figure 2 and 3)**

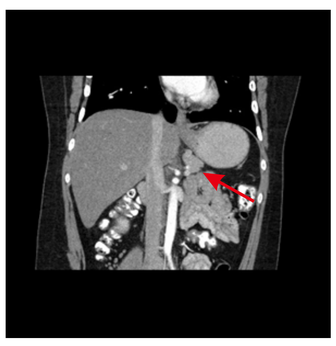

**Figure 2**

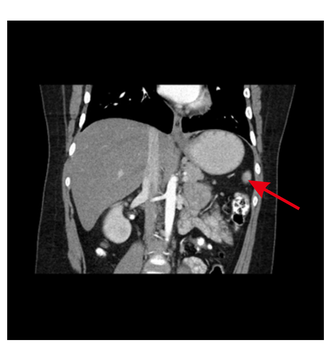

**Figure 3**

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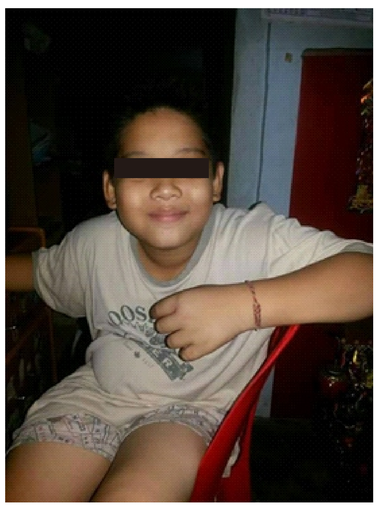

**Figure 1**

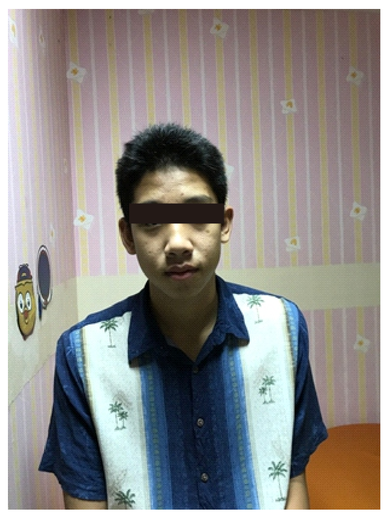

**Figure 4**

## Management:

Minimally invasive surgery endoscopic laparotomy was operated to remove pancreatic mass and found 3 nodules at body and tail of pancreas (the last one is in the tail of pancreas near spleen). Splenectomy was performed.

## Progression:

Histopathology confirmed insulinomas. Blood glucose and insulin level return to normal within two months after surgery. Three years follow up times, he has complete recovery and no evidence of tumor recurrence. At age 14 years **(Figure 4)**, his height and weight are 185 cm and 75 kg, respectively.

## Discussion:

Insulinomas are the most common cause of hypoglycemia resulting from endogenous hyperinsulinism. They are characterized clinically the Whipple triad, as follows :

- Presence of symptoms of hypoglycemia (about 85% of patients)
- Documented low blood sugar at the time of symptoms
- Reversal of symptoms by glucose administration

Abdominal Computed tomography (CT) scanning is 82-94% sensitivity. The biochemical diagnosis of insulinoma included high serum insulin level with low blood glucose level. A large study from Spain (Fernandez-Cruz L, et al) showed laparoscopic surgery to be safe and effective in benign and malignant tumor resection. Most of insulinomas are benign, and long-term cure with total resolution of preoperative symptoms is expected after complete resection.

## Take home message :

Pediatric insulinoma should be considered in any young child presenting with hypoglycemic symptoms.
It is managed effectively with tumor removal using minimally invasive surgery procedures.