

# Double Incomplete Pyloromyotomy (A. Ezzat Technique): A New Technique for Infantile Hypertrophic Pyloric Stenosis: Preliminary Study

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## Abstract

**Background-Purpose:** The study aimed to see the outcome of Double Incomplete Pyloromyotomy as new technique for surgical management of infantile hypertrophic pyloric stenosis (IHPS). **Methods:** This study was conducted in pediatric surgery unite, Zagazig University Hospital, Egypt. Fifteen patients were included in this study (11 male and 4 female) with IHPS from January 2012 to January 2013. Under general anesthesia, two longitudinal separated incisions at different planes as pyloromyotomy. **Results:** Postoperative vomiting and weight gain were recorded. Follow up period was 3 months. Vomiting improved within first 48 hours then stopped after that. Weight gain significantly increased after the operation when compared preoperatively. **Conclusion:** Double Incomplete Pyloromyotomy is a new, safe and effective procedure for treatment of infantile hypertrophic pyloric stenosis.

## Keywords

Hypertrophic Pyloric Stenosis, Double Incomplete Pyloromyotomy

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## 1. Introduction

Infantile hypertrophic pyloric stenosis (IHPS) continues to be a common pediatric surgical condition, with an

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incidence reported of 1 to 8 per 1000 live births [1] [2]. Projectile non bilious vomiting and its complications are common presentations [3] [4]. Diagnosis mainly depends on abdominal ultrasonography [5] [6].

Ramstedt's pyloromyotomy remains the standard surgical treatment with an excellent outcome [7]-[10]. An alternative technique like a double-Y pyloromyotomy offers good results for management of this condition [11].

The aim of the present study was to see the outcome of surgical management of IHPS by Double Incomplete Pyloromyotomy.

## 2. Patients and Methods

A prospective study was planned between January 2102 and January 2103; fifteen patients were included in this study with diagnosis of IHPS by abdominal ultrasonography. These patients were managed by DIP technique. Patients with gross congenital anomalies were excluded from this study. All patients were fully prepared preoperatively regarding hydration and acid base and electrolytes balance.

## 3. Technique

Under general anesthesia, right upper quadrant incision was done. Delivery of pyloric mass into the wound. Two longitudinal incisions was performed: one incision started in one side of the mass from its upper end till middle of it, another incision started in other side of the mass from its lower end till the middle of it as **Figure 1** separation of pyloric muscle in both incisions till mucosa appear. After adequate hemostasis and checking of intact mucosa; abdominal closure in layers was done (A. Ezzat technique).

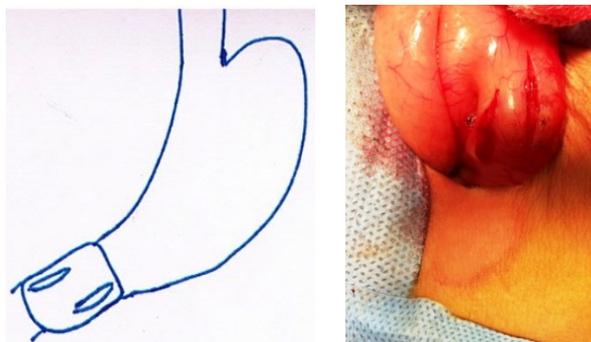
Oral feeding started 6 - 8 hours after surgery by dextrose water proceeding to half-strength milk then full feeds within the first 24 h postoperatively. Information on patient's demographics, postoperative vomiting and weight gain were collected. Patients were followed up for a period of 3 months.

## 4. Results

In this study of 15 patients; 11 were male while 4 were female. Mean age at presentation was 22 days (ranged from 16 days to 32 days). Projectile non bilious vomiting and acid-base disturbance were the main presentation in addition to weight loss and constipation. No mucosal perforation during operation or manifestations suggested it postoperatively. Vomiting improved then stopped within first 24 - 72 h after operation in all patients. We noted that weight gain observed in all patients from first week and proceeded till the end of follow up period. Mean preoperative weight was 2750 gms and the mean postoperative (after 3 months) was 5550 gms. No recurrence of vomiting or long-term complications and No need of re-do pyloromyotomy.

## 5. Discussion

Surgical management of infantile hypertrophic pyloric stenosis was described by Ramstedt in 1912. Till now it is the most popular procedure for IHPS [7]-[10]. Some modifications as Double-Y pyloromyotomy depending on the same principle with nearly the same outcome [11]. These procedures split the pyloric muscle completely in the same plane. Long-term follow of the patients specially after Ramstedt's procedure showed some unfavorable complications as rapid gastric emptying and increased duodenal reflux which explain increased incidence



**Figure 1.** Incisions of Double Incomplete Pyloromyotomy.

of peptic ulcer in several series [12] [13]. Lasheen *et al.* [14] reported segmental internal sphincterotomy for treatment of chronic anal fissure by doing two incomplete incisions in different planes to decrease the incidence of fecal incontinence.

Depending on the same idea we applied double incomplete pyloromyotomy for surgical treatment of IHPS by doing two incomplete incisions in different planes of the pylorus. This new procedure has nearly the same outcome of Ramstedt's procedure with stopping of vomiting and significant weight gain along the follow up period. We suggest that the new technique decrease the incidence of rapid gastric emptying and duodenal reflux after Ramstedt's procedure because of our technique did-not split the pyloric muscle in the same plane. In Ramstedt's procedure, the pyloric mucosa bulges after pyloromyotomy, leading to formation of a gutter inside the pylorus with stasis of food and susceptibility of gastritis and ulcer. In our technique the mucosa did-not bulge due to incomplete incisions and subsequently decreased the incidence of the complications.

Double Incomplete Pyloromyotomy offers the same results of Ramstedt's procedure regarding stopping vomiting, weight gain and low incidence of complications. This new technique needs longer follow up with studying of gastric emptying and pyloric sphincter function.

## 6. Conclusion

Double Incomplete Pyloromyotomy is a new, safe and effective technique for treatment Infantile Hypertrophic Pyloric Stenosis. It has the same results of stander Ramstedt's procedure but needs longer follow up and further studies.

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