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Original Article

Infantile Hypertrophic Pyloric Stenosis Analysis of 84 Cases

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Abstract

This is a descriptive study carried out in the Department of Pediatric Surgery, Rajshahi Medical College Hospital and in the private clinics of Rajshahi, during the period of November 2000 to October 2004. Total 84 patients were treated by Ramstedt's pyloromyotomy after proper resuscitation. The male to female ratio was 5:1. Most of the patients presented to us within 40 days of age (90%). In 90% cases diagnosis were done on clinical basis. The diagnosis is confirmed by barium meal x-ray in 60 cases and sonogram in 71 cases. Serum electrolytes were estimated in all patients. There was metabolic derangement in more than 80% cases. There was no postoperative mortality. Oral feeding started after 6 hours postoperatively in 81 cases. Inadvertent mucosal perforation occurred in 3 cases and that was recognized and repaired successfully without any ill effect. Superficial wound infection encountered in 8.33% cases.

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Introduction

Infantile hypertrophic pyloric stenosis (IHPS) is the most common cause of gastric outlet obstruction in children and is one of the most frequent conditions requiring surgery in the newborn.[1]

The first report of IHPS in 1717 included clinical as well as postmortem findings.[2] The disease was not accepted as a true entity until the description of two cases by Hirschsprung in 1888.[3] Lobker, in 1998, was the first to successfully treat a patient using a gastrojejunostomy to bypass the obstructed pylorus. Early surgical mortality rates remained high. Various extramucosal pyloroplasty techniques were reported in the early 1900s, culminating in Ramstedt's pyloromyotomy procedure in 1911, which has served as the basis for all surgical techniques since.[4]

Pos operative morbidity and mortality have been reduced owing to imporvements in anaesthetic technique and correction of fluid, electrolytes and acid-base balance disturbances. Earlier diagnosis and treatment have also seen a reduction in the proportion of infant suffering preoprative metabolic derangement.[5]

The aim of this study was to review the management of IHPS in our hands and to discuss the result in relation to those obtained in other developed centers.

Materials and methods

A prospective analysis was carried out on neonates and infants in the paediatric surgery department of Rajshahi medical college hospital and in the private clinics of Rajshahi between November 2000 to October 2004. Total 84 Neonates and

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infants were included in this study diagnosed as IHPS. Detailed history was taken and complete physical examination done in all cases. In 71 cases diagnosis was based on vomiting, visible peristalsis and palpable olive. Barium meal x-ray of stomach and duodenum was done in 60 patients and ultrasonography was done in 71 cases, Serum electrolytes was estimated in all patients. Electrolytes imbalance was corrected preoperatively. The traditional Ramstedt's pyloromyotomy was performed under general anaesthesia through right upper abdominal transeverse incision. Wound closed in layers with 5/0 vicryl. Skin closed with subcuticular 6/0 prolene ro vicryl.

Results

Out of 84 patients, 70 were male 14 were female. The male female ratio was 5:1. Age of presentation of the patient between 2 weeks to 10 weeks (Table-1). Most of the patient (57.14%) were of between 3-6 weeks of age. Among 70, 53 were firstborn male childen.

Table 1: Age distribution

Age in weeks	Number of patient	%
1-2	8	09.53
3-6	62	78.81
7-10	84	10.5

Electrolytes imbalance found in 66 (78.58%) patient. That required preoperative correction by intravenous fluid therapy. Surgery was postponded until the biochemical parameter had been corrected.

Inadvertant mucosal perforation occurred in 3 cases of initial series. Those cases were managed by repair and reinforced with omental patch. In 81 cases, feeding was started with plain water after 6 hours of operation and gradually breast feeding started within 24 hours. In remaining 3 cases feeding was started on 4th postoperative day. Few episodes of postoperative vomiting persisted in 44 patients (52.38%) but no one had vomiting lasting more than 5 days. Superficial would infection found in 7 cases (08.33%) which were improved with regular dressing. Seventy five patients was discharged on 3rd to 4th postoperative day. Remaining 9 patients discharged after 7 days of operation.

Discussion

In majority of the cases of our series diagnosis was based on clinical findings, although USG or contrast x-ray also used to confirm the diagnosis. Ultrsonographic diagnosis depends on exposure and experience of ultrsonologist and appropriate ultrasound probe.[6]

In our study, the male-female ratio was 5:1 but in other study it was 4:1[7]. In our series 53 patients were firstborn male child. It was correlated with other studies.[8] The rate of inadvertent mucosal perforation in our series (3.65%) may be due to enthusiasm in our early series for obtaining a complete myotomy near duodenal fornix. Some investigations have reported perforation rate 15-30%[9-10] although other centers have achieved much lower rate[11-12]. Available literature suggests that prompt recognition and repair of an incidental perforation is not associated with an increased incidence of morbidity.[9,12]

In our centre, we practised a simple regimen postoperatively whereby patient received clear fluid 6 hours after surgery and gradually increased to normal feeding on the subsequent 24 hours. The postoperative stay was 3 to 4 days. In other studies it was 3 to 7 days.[13] postoperative vomiting occurred in 44 patients (52.38%). But that was not persistent for more than 5 days. This correlates with other studies[14]. It is well known that wond infection is more common after pyloromyotomy than other operation, possibly due to immune dysfunction or netabolic disturbance. In our series superficial wound infection was 08.33%. This correlates with rate of 3-9% reported by others.[13,15]

The over all result of our management was excellent. Recurrence of vomiting was not reported in any case of this study. Early diagnosis, preoperative correction of fluid and electrolytes imbalance, expert anasthetist support and experience of surgeon may play important role for better postoperative outcome of patients with IHPS.

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