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Experience With Circum-umbilical Incision in Infantile Hypertrophic Pyloric Stenosis at Sheikh Zayed Hospital, Lahore

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ABSTRACT

Circum-umblical incision was used in 35 infants & results were studied regarding perioperative complications & hospital stay. There was a definite advantage of excellent cosmetic scar with no significant difference in morbidity. We recommend circum-umbilical Incision as an alternate approach for IHPS to right upper quadrant incision.

Key Words: Pyloric stenosis, Hypertrophy, Infant

INTRODUCTION

Infantile hypertrophic pyloric stenosis (IHPS) is a common condition with an incidence of 4 per 1000 live births in the UK, affecting boys four times as frequently as girls[1]. It leads to almost complete gastric outlet obstruction in otherwise healthy infants. The condition was fatal in nearly all cases at the beginning of this century but is rarely so today by virtue of improved pre- and post-operative care, and evolution of safe and effective surgery. Fredet-Ramstedt pyloromyotomy is the generally accepted operation for this condition[2].

Although the same basic technique of pyloromyotomy is being used worldwide without any significant modification for the last 80 years, different surgical approaches to the pylorus have been utilized. We describe our experience with the circum-umbilical incision along with review of the literature.

PATIENTS AND METHODS

Medical records of patients operated upon consecutively by the authors during the period 2000-2005 at Sheikh Zayed Hospital, Lahore were reviewed retrospectively. The standard Fredet-Ramstedt pyloromyotomy was performed in all the patients (Table I).

Table 1: Basic data and results in IHPS operated through Circum umbiliical Incision

Number		35
Age	Mean	35 days
	(range)	10-60
Sex	Male	30
	Female	5
Operating Time	Mean	27 min
	(range)	20-38
Wound infection		0
Wound haemotoma		1
Wound dehiscence	–	—
Post-op hospital stay:	Mean	48 hours
	(range)	24-72

Thorough skin preparation was carried out in all patients with betadine, paying special attention to cleaning of the umbilicus. Patients were administered a single intravenous dose of co-amoxiclav at the time of induction of anaesthesia. Circum-umbilical incision wsa made in the superior fold and depend to the linea alba which was then divided vertically. After opening the peritoneum, the

umbilical vein was retracted to the left side. Delivery of the pyloric tumour was facilitated by retracting the wound in the cranial direction. After pyloromyotomy, the deep layers of the abdominal wall were closed as a single layer with absorbable monofilament sutures. Subcuticular absorbable sutures were used to close the skin.

RESULTS

There was no intra-operative complication. Average operating time was twenty seven minutes. Post operative morbidity & hospital stay was minimum (Table-I). One patient developed small subcutaneous Haematoma that was managed conservatively with antibiotics orally for five days. Follow up of these patients for 3 months to 1 year showed no dehiscence, incisional hernia or any other wound complication. The scar in these patients was virtually imperceptible.

DISCUSSION

Many surgical approaches to the pylorus have been used. Right upper quadrant transverse (muscle-cutting, or muscle-spliting with either transverse or vertical division of the posterior rectus sheath and the peritoneum) oblique subcostal, paramedian, pararectal, and upper midline incisions[3-5].

Vertical incisions have fallen into disrepute as they results in a cosmetically unacceptable scar that enlarges as the child grows[2]. In addition, they are associate with a higher incidence of wound dehiscence[6]. Transverse incisions with vertical division of the posterior rectus sheath and peritoneum, or vertical muscle-splitting with transverse division of the posterior rectus sheath and peritoneum appear to be unduly complex, require considerable retraction and do not offer any significant advantage[6-7].

A standard right upper quadrant transverse muscle-cutting or muscle-splitting incision is the most commonly used approach for pyloromytomy[8]. Although it is easy and provides good exposure, it leaves a visible scar. In search of a cosmetically better surgical approach, in 1986, Tan and Bianchi came forward with the brilliant idea of using an umbilical fold incision[9]. Since then a few more series have been published from various paediatric surgical centres describing their experience with this approach[10-12]. We utilized this incision in 35 infants and studied our results retrospectively. The presentation and postoperative course was similar as described in literature. Incision related complications were uncommon and insignificant. Various incision-related complications, in association with pylormytomy in general, include wound infection, dehiscence, hypertrophic scar and incisional hernia. Wound infection is the most common complication with an incidence varying from 1-11%[2,13]. Various factors play a role in this high incidence of wound infection in what should be a clean operation. Staphylococcus aureus is the commonly implicated micro-organism[14,15]. As anti-staphylococcus antibiotics have been found to decrease the incidence of wound infection[8,16], we routinely administered a single peri-operative dose of co-amoxiclav to all our patients undergoing pylormyotomy. Only one patient developed wound haematoma. None of the patients developed dehiscence or incisional hernia. We attribute this low incidence of wound-related complications to thorough skin and umbilical cleansing using betadine, and mass closure of the abdominal wall. The circum-umbilical incision was not found to be associated with increased morbidity or prolonged hospital stay. The final appearance of the scar was much superior with this incision. Recently pyloromytomy has been performed laproscopicaly[17]. Some centres have advocated its superiority over open surgical methods[17-18]. Question regarding high cost, specialized equipment and expertise are still queered.

We believe that the circum-umbilical incision provides an adequate exposure that is comparable to other available surgical approaches for pylormyotomy and gives excellent cosmetic scar without increasing the morbidity or mortality rate & is cost effective.

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