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Oral Feeding After Pyloromyotomy for Infantile Hypertrophic Pyloric Stenosis

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ABSTRACT

Objective: to evaluate the effect of early starting oral feeding after Ramsted's operation for infantile hypertrophic pyloric stenosis.

Design: a comparison study.

Setting: all patients managed at Al Khansaa Teaching Hospital from March 2017-March 2019.

Participants: seventy-five patients diagnosed as infantile hypertrophic pyloric stenosis.

Methods:the initial assessment included; age, sex, sequence in family, mother age, birth weight, onset of projectile vomiting, typeof feeding, ''olive'' mass palpation , and feeding test. Barium swallow study and U/S examination were done when needed. Ramsted's operation was performed to all. Oral feeding started 8 hours post operatively to some and delayed 24 hours post operatively to other group. Early complications were recorded.

Results: there were 75 patients, 85% were male,52% presented between (3-6 weeks) of life,72% were first born male. Their birth weight ranging between(2700-3500)gm. The onset of projectile vomiting was during the second week of life in 32%. The mass was palpable in85% and feeding test was positive in 93%.Ninety -five percent of patients who started oral feeding 8 hours post operatively vomited more than three times, while 93% of those who started oral feeding next day. Wound infection occurred in 5.3%, and only one death 1.3%.

Conclusions: early diagnosis, proper resuscitations of patients with infantile hypertrophic pyloric stenosis will decrease the incidence of complications. Ramsted's operation is still the standard. Vomiting is a common benign post operative complication. Starting oral feeding early does not change the outcome or cause more complications, on the opposite it can lead to shorter length of stay in hospital.

Keywords: Feeding, Pyloric, Hypertrophy & Stenosis.

INTRODUCTION

Infantile hypertrophic pyloric stenosis is the most common disorder producing emesis in infancy that necessitate surgery [1,2]. The causes of infantile hypertrophic pyloric stenosis are multifactorial. [3]. Both environmental and hereditary factors are believed to be contributory, bottle-feeding as the most significant risk factor[4,5]. Typical presentation is onset of non bloody, non bilious projectile vomiting. The usual age of presentation is (2-6 weeks) of life, approximately 95% of infantile hypertrophic pyloric stenosis cases are diagnosed in age 3-12 weeks, rare in premature infants and being delayed in diagnosis. Infantile hypertrophic pyloric stenosisis more common in male than in female in 4:1 ratio, with 30% of them being first born male [6]. The pyloric mass "tumor" is pathognomonic [7,8,9], depending on the experience and patience of the examiner, if the clinical features is not clear, U/S and or Ba study can be used [10,11,12,13,14,15]. Ramsted's pyloromyotomy is universally accepted as the preferred operation. [1]. Oral feeding usually is initiated 4 hours after surgery using Pedialyte solution [10]. Post operative emesis is common after pyloromyotomy[16,17]. This study determined the effects of early postoperative oral feeding compared with late scheduled feeding.

PATIENTS AND METHODS

During the period from March 2017-March 2019; seventy five patients with infantile hypertrophic pyloric stenosis were managed in Al-Khansaa Teaching Hospital and evaluated for early postoperative feeding against late scheduled feeding. The information obtained were; age of presentation, sex, sequence in family, birth weight, onset of projectile vomiting, type of feeding and mother's age. Those with a palpable olive mass and positive feeding test, needed no further test. While cases indoubts were sent for U/S and Barium swallow study. Pyloromyotomy (Ramsted's operation)was performed for all. Postoperative complications mainly vomiting were recorded regarding the onset of oral feeding. Some received clear fluid 8 hours another group were kept nothing per oral for 24 hours post operatively. Those with perforation of mucosa where excluded as oral feeding is delayed for 48-72 hours later according to infant's condition.

RESULTS

There were 75 patients collected during the period from March 2017-March 2019; most of the patients were males 64(85.3%)only 11(14.6%) were females. The age of presentationranged from 3 weeks to 12 weeks. Age with sex distribution is shown in (Table 1). The onset of projectile vomiting started from the first week of life and up to seventh week of age but mainly at the second week of life 24 patients (32%) (Table 2). Most of them are first born baby 54 patients (72%)(Table 3), to mothers aged between 20 -30 years [39 mothers (52%)]. Birth weight of patients ranged from 2700 - 3500 gm, only 5 patients weighing less than 2500gm (6.6%). Projectile vomiting was the main presenting symptom, in 70 patients (93.3%);and palpable mass felt in 64 patients(85.3%)(Table 4).Ramsted's pyloromyotomy was performed to all of them. Patients were divided into two groups, oral feeding was initiated 8 hours post operatively in group A, and was delayed to 24 hours later in group B, patients with mucosal perforation intra operative were excluded as oral feeding was delayed 48-72 hours later. (Table 5) shows the 2 groups A&B with post operative emesis. We noticed 39 patients of group A(95%)developed emesis, 25 of them(61%)vomited less than 3 times, while 28 patients of group B (93%) vomited ,and only 8 patients (26.6%)vomited more than 3 times. Most of group A patients were discharged before 48 hours after surgery 26 (63.4%) while none of group B. Only 14 patients (34.2%)of group A stayed more than 48 hours,but (73.3%)of group B, (Table 6). Four patients developed wound infection (5.3%),and only one death (1.3%).

Table 1: Age and Sex distribution

Age	No of patients	Percentage	Male		Female	
			No	Percentage	No	Percentage
<3 week	3	4%	3	4%	0	-
3-6 week	39	52%	36	48%	3	4%
7-10 week	19	25.3%	14	18.6%	5	6.6%
>10 week	14	18.6%	11	14.6%	3	4%

Table 2: Onset of projectile vomiting

Onset of projectile vomiting	No of patients	Percentage
1st week	13	17.3%
2nd week	24	32%
3rd week	12	16%
4th week	10	13.3%
5th week	8	10.6%
6th week	3	4%
7th week	5	6.6%

Table 3: Sequence of patient in family

Sequence of patient in family	No of patients	Percentage
1st	54	72%
2nd	10	13.3%
3rd	2	2.6%
4th	1	1.3%
5th	3	4%
6th	1	1.3%
7th	1	1.3%

Table 4: Signs & Symptoms

	S&S	No of patients	Percentage
Symptoms	Projectile of vomiting	70	93.3%
	Constipation	39	52%
	Diarrhea	4	5.3%
Signs	Palpable mass	64	85.3%
	Feeding test	70	93.3%
	Dehydration	55	73.3%

Table 5: Post-operative vomiting

Vomiting	Group A		Group B	
	No	Percentage	No	Percentage
<3 x	25	60.9%	20	66.6%
>3 x	14	34.1%	8	26.6%
Total	39	95%	28	93%

Table 6: Hospital stay

Hospital stay	Group A		Group B	
	No	Percentage	No	Percentage
<48 h	26	63.4%	-	-
48-72 h	14	34.2%	22	73.3%
>72 h	1	2.4%	8	26.6%

DISCUSSION

Infantile hypertrophic pyloric stenosis (IHPS) is a common surgical problem in enfants that affects 2.5-3% of live births [2,18,19]and is one of the most common causesof gastric outlet obstruction in the first 3 months of age [20]. We managed 75 patients with (IHPS)in our ward in Al Khansaa Teaching Hospital from March 2017-March 2019. Eighty-five percent ofpatients were males, with male to female ratio 5.8:1, as in other studies the male to female ranged from 3.5:1 to 8.5:1[21].The firstborn male enfants having the highest risk [22,23,24], as we reportedin our study 54 patients (72%)were first born male enfants too. Most of the mothers were below 25 years of age 69(92%), as shown in study by Applegate M [25], another report showed 29%higher risk associated with younger maternal age [26]. Projectile vomiting is the most common presentation in 70 of our patients (93.3%), this is similar to other studies as that was done by Breivil K, Soreid JA and Bland J, in which the projectile vomiting occurred in 92.5% of cases. [27]. The peak incidence of age of presentation was between 3-6 weeks of age which accounted for 52% of our patients, and this is near to study done by Puri P and LakshmandassG[6,28]and in another it was 4-6 weeks [29] or 4-8 weeks [30]. The pyloric mass which is pathognomonic, was palpated in 85.3% of our patients, as was reported by Howard P when a mass was readily palpable in 80% of cases[31], others reported nearly results (an olive can be palpitated in right upper quadrant or epigastrium of abdomen in 60-80% of infants[7,8,9], while some others can palpate a mass only in 47% -48% of patients as in M Haghighalstudy[32] andTaylor ND study[33], may be due to different experience. Diagnosis was confirmed by U/S and Ba study in some cases, and Ramsted's

pyloromyotomy was performed for all. In this study we tried to follow the effects of early oral feeding (8 hours after operation) in group A, against late oral feeding (24 hours later) ingroup B. Those with mucosal perforation intra operative were excluded. Of group A ;95% vomited post operatively, only 34% vomited more than 3 times, while of group B; 93% developed vomiting, only 26,6% more than 3 times.as we noticed no clear differences between two groups, although group A had more frequent vomiting but not significant. On the other hand group, A had shorter length of hospital stay. This means less cost, and more bed for other patients in our recent difficult circumstances. The same was shown in another study in Basrah[34] where no significant statistical differences in the incidence of post operative emesis whether feeding was initiated 6 hours after surgery (early feeding) or delayed to the next morning, which was consistent with what was seen by Wheeler RA, et al [35]and Gollin G, et al[36]. Another studies disagreed about that; as suggested that prescribing a late feeding regimen significantly decreases the odds of patients experiencing postoperative emesis when compared with an early feeding regimen,examples for that studies done by Lee AC, Munro FD, MacKinlay GA [37]and Georgeson KE et al [38]. There is no consensus on optimal feeding after pyloromyotomy[21],as a result of this lack of consensus feeding regimen are currently prescribed based on surgeon preference and are highly individualized [37]. From our study we noticed that 8 hours postoperative is fear enough to initiate oral feeding starting with clear fluids and gradually reaching the full milk requirements as those who recommend delayed feeding consider "early" feeding within 4 hours post operatively[37,38].

CONCLUSIONS

Early diagnosis, proper resuscitations of patients with infantile hypertrophic pyloric stenosis will decrease the incidence of complications. Good historytakingand careful clinical examination obviate the need for complex investigations, although Ultra-Sonic study can be of great help,leaving Barium swallowstudy spared for unsettled diagnosis. Pyloromyotomy (Ramsted's operation) is still the gold standard operation for infantile hypertrophic pyloric stenosis. Clean and carefully done surgery minimizes operative complications. Oral feeding 8 hours after surgery does notsignificantly change the outcome, nor causes more complications in simple cases, on the other hand it could lead to shorter length of hospital stay, which provides more beds for other patients and that is very important in our recent circumstances.

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