OMENTAL HERNIATION: AN UNDERESTIMATED COMPLICATION OF LAPAROSCOPIC PYLOROMYOTOMY

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Abstract

Aim of the study Pyloromyotomy is a common surgical procedure in infants and can be performed with a small laparotomy or laparoscopically. So far, no specific complications have been documented about one of the approaches. There is a small number of case reports about omental herniation (OH), a complication of the laparoscopic approach, however its incidences and consequences are unknown. The objective of this study is to examine and compare the complications of open and laparoscopic pyloromyotomy with specific attention to OH.

Methods Data were analyzed retrospectively of all patients with hypertrophic pyloric stenosis who underwent pyloromyotomy at two pediatric surgical centers between January 2007 and December 2017. Severity of complications was classified by Clavien-Dindo.

Main We included 474 infants (236 open; 238 laparoscopic). 401 were male (85%) and the median (IQR) age was 33 (19) days. There were 83 surgical complications in 71 patients (15.0%). In the open group 45 infants (19.1%) experienced a complication vs. 26 infants in the laparoscopic group (10.5%)(p=0.013). Severity and quantity of postoperative complications were comparable between both groups (Clavien-Dindo grade I-IIIb)(open N=26; laparoscopic N=22)(p=0.522). Serosal lesions of the stomach and fascial dehiscence occurred only after the open approach (N=19, p<0.001 and N= 8, p=0.004 respectively). OH occurred only after laparoscopy (N=6, p=0.03) and required re-intervention in all cases.

Conclusions The surgical complication rate of pyloromyotomy was 15.0%. Serosal lesions of the stomach and fascial dehiscence are only present after open pyloromyotomy and OH after laparoscopy. The latter complication is underestimated and requires attention.

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Table 1 Baseline characteristics open vs lap

	Total	Open (N= 236)	Laparoscopic (N=238)	p-value
Sex (M/F)	401/73	195/41	206/32	0.24
Age (days)	33.0 [19]	32.5 [16]	35.0 [23]	0.28
Term/ preterm	422/48*	213/23	209/25	0.74
Birthweight (g)	3440.0 [738]*	3425.0 [720]	3457.5 [787]	0.84

Legend Values are patient numbers or median with [Interquartile Range]. *missing values.

Table 2. Number of complications of open vs. laparoscopic pyloromyotomy

	Total (%) (N= 474)	Open (N= 236)	Laparoscopic (N=238)	p-value
Operative complications				
Intraoperative no signs of IHPS	5 (1.1)	–	–	–
Duodenal perforation (stitched)	4 (0.8)	2	2	1.000
Serosal lesion of the stomach	19 (4.0)	19	0	**0.000**
Hemorrhage	1 (0.2)	0	1	1.000
Lesion of the skin	1 (0.2)	1	0	0.498
Lesion of the liver	1 (0.2)	0	1	1.000
Postoperative complications				
Duodenal perforation (reoperation)	2 (0.4)	1	1	1.000
Fascial dehiscence	8 (1.7)	8	0	**0.004**
Omental herniation	6 (1.3)	0	6	**0.030**
Wound infection	21 (4.4)	14	7	0.114
Incomplete pyloromyotomy	4 (0.8)	1	3	0.623
Incisional hernia	10 (2.1)	4	6	0.751
Sepsis	3 (0.6)	2	1	0.623
Hemorrhage (reoperation)	1 (0.2)	0	1	1.000
Peritonitis	1 (0.2)	0	1	1.000
Subcutaneous hematoma	1 (0.2)	1	0	0.498

Legend Values are patient numbers with (incidence).

Table 3 Number of postoperative complications classified by Clavien-Dindo

	Total	I		II		IIIa		IIIb	
		open	lap	open	lap	open	lap	open	lap
Duodenal perforation	2*	–	–	–	–	–	–	1	1
Fascial dehiscence	8	2	–	–	–	–	–	6	–
Omental herniation	6	–	–	–	–	–	3	–	3
Wound infection	21	9	5	5	2	–	–	–	–
Incomplete pyloromyotomy	4	–	–	–	–	–	–	2	2
Incisional hernia	10	4	6	–	–	–	–	–	–
Sepsis	3	–	–	2	1	–	–	–	–
Hemorrhage	1*	–	–	–	–	–	–	–	1
Peritonitis	1	–	–	–	1	–	–	–	–
Subcutaneous hematoma	1	1	–	–	–	–	–	–	–

Legend *Complications which were recognized and treated sufficiently peroperative were excluded.