



Inguinal hernia in premature boys: Should we systematically explore the contralateral side? ☆☆☆



Olivier Pierre Mailet ^{a,*}, Sarah Garnier ^a, Christophe Dadure ^b, Sophie Bringuier ^c, Guillaume Podevin ^d, Alexis Arnaud ^e, Caroline Linard ^f, Laurent Fourcade ^g, Michel Ponet ^h, Arnaud Bonnard ⁱ, Jean Breaud ^j, Manuel Lopez ^k, Christian Piolat ^l, Emmanuel Sapin ^m, Luke Harper ⁿ, Nicolas Kalfa ^a

^a Unité de Chirurgie Viscérale et Urologique Pédiatrique, Département de Chirurgie Pédiatrique CHU Lapeyronie, Montpellier Université Montpellier I, Montpellier, France

^b Département de Réanimation d'Anesthésie Unité d'Anesthésie de Soins Continus Chirurgicaux Pédiatriques CHU Lapeyronie, Montpellier Université Montpellier I, Montpellier, France

^c Département Médical d'Information, CHU Lapeyronie, Montpellier Université Montpellier I, Montpellier, France

^d Département de chirurgie pédiatrique, Hôpital Mère-Enfant, CHU Nantes, Nantes, France

^e Département de chirurgie pédiatrique, CHU Rennes, Rennes, France

^f Unité de chirurgie pédiatrique, CHU Morvan, Brest, France

^g Département de chirurgie pédiatrique Hôpital Mère-enfant CHU Limoges, Limoges, France

^h Département de chirurgie pédiatrique, Centre Hospitalier Intercommunal Créteil, Créteil, France

ⁱ Département de chirurgie pédiatrique urologie CHU Robert Debré, Paris, France

^j Département de chirurgie pédiatrique, CHU Lanval, Nice, France

^k Département de chirurgie pédiatrique, CHU Saint Etienne, Saint Etienne, France

^l Unité de chirurgie pédiatrique CHU Grenoble, Grenoble, France

^m Département de chirurgie pédiatrique, Hôpital d'Enfants, CHU Dijon, Dijon, France

ⁿ Département de chirurgie pédiatrique, CHU Felix Guyon, Saint Denis, Réunion, France

ARTICLE INFO

Article history:

Received 7 October 2013

Received in revised form 21 January 2014

Accepted 24 January 2014

Key words:

Premature boy

Inguinal/groin hernia

Metachronous hernia

Testicular hypotrophy

Neonatal anesthesiology

ABSTRACT

Objective: Bilateral surgery has been largely advocated in premature boys with unilateral inguinal hernia owing to the high incidence of contralateral patent processus vaginalis. Recently, the potential morbidity of herniotomy in low birth-weight babies and the progress in pediatric anesthesia questioned this attitude. This study aims to evaluate the incidence of contralateral metachronous hernia in a large series of premature boys and to compare the morbidity of preventive versus elective surgery.

Methods: This retrospective multicenter analysis of 964 premature boys presenting with unilateral inguinal hernia operated from 1998 to 2012 included 557 infants who benefited from a unilateral herniotomy and 407 from a bilateral herniotomy (median follow-up 12 months).

Results: Contralateral metachronous hernia after unilateral surgery occurred in 11% (n = 60) without significant difference according to the initial symptomatic side (9.5% on right vs 13% on left, p > 0.05). Postoperative morbidity on the contralateral side was higher after preventive surgery than elective surgery with metachronous hernia (2.45% versus 0.9%, p = 0.05) especially for secondary cryptorchidism (1% vs 0%, p = 0.03). Despite the risk of metachronous incarcerated hernia, elective surgery did not increase the rate of testicular hypotrophy on the opposite side (0.7%, vs 0.7%, p > 0.05).

Conclusion: Systematic bilateral herniotomy is unnecessary in almost 90% of patients and has a significant morbidity. Secondary surgery for metachronous hernia does not increase the risk of testicular lesion and even reduces the risk of secondary cryptorchidism. These results, along with the risk of hypofertility reported after bilateral surgery, may justify treating only the symptomatic side in premature boys.

© 2014 Elsevier Inc. All rights reserved.

Abbreviations: GA, Gestational age; WA, weeks of amenorrhea; PROS, Prospective; COMP, Comparative; RAND, Randomized.

☆ Financial Disclosure: The authors have no financial relationships relevant to this article to disclose.

☆☆ Conflict of Interest: The authors have no conflict of interest to disclose.

* Corresponding author at: Unité de chirurgie viscérale et urologique, pédiatriques, Département de chirurgie pédiatrique, CHU Lapeyronie, Montpellier et Université, Montpellier I, 371, avenue du Doyen Gaston Giraud 34295 Montpellier Cedex 5. Tel.: +33 682418246.

E-mail address: o-mailet@chu-montpellier.fr (O.P. Mailet).

Inguinal hernia is common in former premature infants, with an incidence of 13% in infants born before 32 weeks of gestational age (GA) and up to 30% in infants born less than 1 kg [1,2]. Premature infants may also have a high risk of recurrence on the contralateral side [3]. For fifty years the consensus has thus been to explore systematically the contralateral side during unilateral groin hernia [4] to avoid another early anesthesia and to reduce the risk of strangulation of metachronous contralateral hernia.

Unfortunately the natural history of peritoneo-vaginalis processus remains largely unknown. Reliable predictive factors for the

occurrence of a metachronous contralateral hernia are lacking, and most of these preventive surgeries may be unnecessary. Such a decision should thus be taken after balancing on the one hand the risks of a non operative approach, and on the other hand the risks of systematic groin exploration in low birth weight boys with a potential deferential and testicular morbidity.

Today, new data from improved anesthetic techniques and better postoperative follow up question the consensus of bilateral surgery. Even in preterm infant, the morbid mortality of anesthesia has decreased with the development of spinal anesthesia [5,6]. The pediatric follow up of these boys tends to show that the rate of metachronous hernia is not as high as expected. The risks of abnormal testicular trophicity [7], the risk of vasal obstruction [8] and the possibility of chronic pain after herniotomy should not be neglected in these patients [9]. This debate has become more important in developed country with the increasing number of premature and very low weight babies [10].

To rationalize the surgical decision between unilateral and bilateral herniotomy, objective data are needed concerning the proportion of contralateral metachronous hernia on a large series of patients, the evaluation of morbidity of delayed surgery and the risk of preventive herniotomy. This study was designed to provide these data in a selected population of premature boys exclusively.

1. Material and methods

1.1. Patients' selection and data collection

We conducted a nationwide multicenter retrospective study of the medical charts of premature boys with inguinal hernia operated at 12 French university hospitals. From January 1998 to January 2012, 964 boys born before 36 weeks of gestation and presenting with a unilateral symptomatic inguinal hernia were included. Patients born after 35 weeks of gestation or with bilateral symptomatic hernia were excluded. Eligible infants were managed by herniotomy with direct inguinal approach. The type of surgery was specific to each institution: 2 institutions performed systematically a preventive herniotomy on the nonsymptomatic side, 6 institutions did not perform preventive herniotomy and in 4 institutions the type of surgery depended on each surgeon's habits. The anesthetic management depended on the habits in the different anesthetic teams, and was either a general anesthesia or a neuraxial block (spinal anesthesia or caudal blockade). Our anonymous inclusions were accepted to our institutional board review.

Data were collected through a standardized form including: GA, birth weight, age at surgery, side of hernia, circumstances of surgery (not strangulated or strangulated), type of surgery (unilateral or bilateral), type of anesthesia (general anesthesia or central block), postoperative complications, and metachronous hernia. In case of metachronous hernia, all data for the second surgery were collected again.

1.2. Statistical analysis

Continuous data were expressed as median (range) for non-Gaussian variables. Categorical data were expressed as frequencies (%). Continuous variables were compared with Student's t-test or the Mann–Whitney U-test for the non-Gaussian variables. Categorical variables were compared with the Chi-squared test or Fischer test. A significance threshold of $p < 0.05$ was used. Statistical analysis was performed using SAS software version 8.02 (SAS Institute, Cary, NC).

2. Results

2.1. Descriptive data

2.1.1. Overall data

The median number of weeks of gestation was 31 weeks (range 24–35 weeks). The median birth weight was 1.56 kg (range 0.56–

3.78 kg). Fifty-eight percent of patients ($n = 559$) had a right hernia and 42% ($n = 405$) a left one. The median age at surgery was 73 days (range 12 day to 1 year) and 23.6% ($n = 225$) were operated after an episode of incarceration. Fifty-two percent of patients ($n = 501$) benefited from a general anesthesia and 48% ($n = 463$) from a neuraxial block (spinal anesthesia or caudal blockade). The median follow up was 12 months (range 6–132 months). The overall rate of complications for all patients and for all sides was 5% ($n = 49$) with 2.5% ($n = 24$) of testicular atrophy, 1% ($n = 12$) of secondary cryptorchidism, 0.7% ($n = 7$) of recurrent hernia, 0.5% ($n = 5$) of wound infection and 0.3% ($n = 3$) of significant hydrocele.

We also performed a subgroup analysis to take account of gestational age. Even though the rate of bilateral herniotomy and metachronous hernia was more important in the youngest group (GA < 36 weeks), the rate of sequelae was less than the 32–35 GA weeks group (Table 2).

2.1.2. Unilateral herniotomy

Five hundred and fifty seven patients benefited from a unilateral herniotomy (57.8%), 211 were performed on the left side and 346 on the right side. The term of birth, birth weight and age at surgery are summarized in Table 1. Twenty two percent of these patients ($n = 122$) presented with an incarceration mainly on the right side (77% versus 23%, $p < 0.05$). Fifty three percent of these surgeries ($n = 294$) were performed under general anesthesia and 44% ($n = 244$) under neuraxial block.

Metachronous hernia occurred in 11% of patients ($n = 60$). Metachronous hernia was not significantly more frequent on the right side than on the left side (right side 28/211 = 13% versus left side 33/340 = 9.5%, $p > 0.05$). Seven metachronous hernias were incarcerated (1.25% of all patients with unilateral herniotomy). After surgery of the metachronous hernia, there was no secondary cryptorchidism, no recurrence of hernia but 4 cases of testicular hypertrophy were noted in the group incarcerated.

2.1.3. Bilateral herniotomy

Bilateral hernia (i.e. a clinically detectable protrusion of abdominal viscera through a ductus vaginalis) has been excluded from the study. We analyzed bilateral herniotomy with preventive contralateral surgery. Four hundred and seven patients (42.2%) benefited from a bilateral herniotomy, 47% ($n = 192$) were performed for a left symptomatic side and 53% ($n = 215$) for a right symptomatic side. Term of birth, birth weight and age at surgery are summarized in Table 1. Twenty five percent of these patients ($n = 102$) presented with an incarceration mainly on the right side (57% versus 43%, $p > 0.05$). In 48% of patients ($n = 195$) this surgery was performed under general anesthesia and 50% ($n = 203$) under central block.

Table 1
Characteristics of population.

Variable	Unilateral herniotomy, $n = 557$ (58%)	Bilateral herniotomy, $n = 407$ (42%)	p-value
Median age of surgery (d)	75	70	0.09
Range	12–360	12–492	
Median birth weight (g)	1700	1420	<0.001
Range	635–3780	560–3600	
Median GA	31	30	<0.001
Range	23–35	22–35	
Side of symptomatic hernia			
Right	346 (62%)	215 (53%)	0.004
Left	211 (38%)	192 (47%)	
Anesthesia			
General anesthesia	294 (53%)	(48%)	0.1
Neuraxial block	244 (44%)	2032 (50%)	

Data are number of premature boys and percentage (%). GA: Gestational Age.

Download English Version:

<https://daneshyari.com/en/article/4155824>

Download Persian Version:

<https://daneshyari.com/article/4155824>

[Daneshyari.com](https://daneshyari.com)