

French Medical Institute for Mothers and Children

Postgraduate Medical Education Program

Pediatric Surgery Department

**Thesis protocol
Dr. Abdullah Bahloli**

Pediatric post-operative abdominal wound Complications in association with midline vs transverse incision in tertiary care setting Kabul Afghanistan: A Cohort Study

Name of Supervisors: Dr. Mohammad Tareq Rahimi, Head of Pediatric Surgery

Name of Committee Members: Dr. Homayoon Atiq Ghairatmal, Pediatric Surgery Faculty Member, Dr. Nooria Atta MD, PGD, MSc (Epidemiologic Oncology)

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Introduction:

Wound complications in pediatric abdominal surgery is associated with high mortality and morbidity,(1) Most reviews of these complication are in the adult medical literature(2), The incidence of wound complication in adults varies from center to center worldwide(3). it is recorded to be 1-3 % in most center(3), some centers in India recorded incidence of burst abdomen which is one of the serious abdominal wound complication is as high as 10-30%(3). Among abdominal wound complications burst abdomen is associated with a mortality rate as high as 45%(3). Burst abdomen is defined as post-operative separation of abdominal musculo-aponeurotic layers.(4) it is thought to be as common in children as in adults.(2) Literature on risk factors for abdominal wound complications in children are limited.(5) Table 1. Incision type (midline or transverse) has also its effect on preventing wound complication.(6) according to literature review there is no update article and prospective study in pediatric field on wound complication, and to my knowledge no study has been done in Afghanistan related to this topic. In this study we will define possible wound complications related to incision type in a tertiary care hospital.

Table 1 Literature concerning abdominal wound dehiscence in children(5)

Author	Year of publication	No. of patients	Incidence (%)	Mortality (%)	Statistical analysis
Gross and Ferguson	1953	75	0.9	45.3	NR
Campbell and Swenson	1972	26	0.97	19.2	NR

Gruessner et al.	1986	21	1.17	14.3	NR
Waldhausen and Davies	2000	12	0.43	8.3	Univariate
Cigdem et al.	2006	27	0.08	34.5	Univariate
Van Ramshorst^a	2009	63	0.6	11.1	Multivariate

NR not Reported

^a Current Series

Rational

The study will find post-operative wound complications in association with incision type in a tertiary care hospital Kabul Afghanistan. To my knowledge there is no study available in Afghanistan's medical literature related to this topic until now. In international literatures on risk factors for abdominal wound complications in children is limited.(5)

Objective:

Primary Objective:

This study is designed to find the association between incision type and postoperative wound dehiscence.

Secondary Objective:

To find other risk factors for abdominal wound early complications.

Question:

What is the association between incision type (midline, transverse, others) and abdominal wound complications?

Hypothesis:

Null Hypothesis:

There is no association between incision type and post-operative abdominal wound complication.

Alternative Hypothesis:

There is association between incision type and post-operative abdominal wound complication.

Methodology

Study design:

Cohort Study

Study population:

all abdominal surgeries patient age under 18-year-old.

Eligibility Criteria

Exclusion criteria:

Umbilical hernia, patients already admitted for wound complication, laparoscopic surgery.

Inclusion criteria:

urologic surgeries, all abdominal surgeries patient under 18-year-old.

Setting:

Pediatric surgery department FMIC, Ataturk children Hospital and Indira Gandhi children hospital: a multi-center study

Data collection:

Data Collection Form: In annex 1

Data Collection Method:

Data will be collected from patient's file, lab reports and physical examination.

Sampling Strategy:

Convenience

Sample Size:

All patient who will undergo abdominal surgery from January 2019 to June 2020 will be collected as a sample size.

Data management:

After collection of data it will be doubly entered in SPSS and data backup will be saved and a hard copy of data will be kept in safe place.

Data Analysis:

Plan for analysis:

Statistical Package for Social Science (SPSS) version 25.0 will be used for statistical analysis. To analyze data firstly descriptive statistical methods will be applied. Mean +- standard deviation or

median (IQR) will be calculated and used for representation of the quantitative data considering their distribution types.

For categorical data frequencies and percentages (%) will be calculated. For comparison between groups of data specific methods (chi-square, t-test...) will be chosen and applied according the data type and distribution, number of groups and their dependency.

To compare groups of data statistical test such as chi-square, t-test, Mann-Whitney U and other tests will be used accordingly. The significance level is set at $p < 0.05$.

Chi-square test for independence will be run to explore the association between two categorical variables.

Study duration:

From Nov 2018 to Jun 2020. Time table is attached in annex 1.

Ethical Consideration:

Permission will be taken from the Ministry of Public Health (MoPH) Institutional Review Board (IRB) and Ethical Review Committee (ERC) of French Medical Institute for Mothers and Children (FMIC), Kabul, Afghanistan. Approval from the head of Pediatric Surgery Department of FMIC will be taken for conducting the study. Data from patients used in this study will be extracted from medical records files and patient's physical examination. This information will be confidential and the data will not be used for any other purpose and only specific record numbers will be used as a patient's identity.

Limitation of the Study:

This study is only going to be conducted in French Medical Institute for Children (FMIC), therefore the conclusion of this study could be applicable in FMIC and similar centers.