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OMICS International is a pioneer and leading science event organizer, which publishes around 500 open access journals and conducts over 500 Medical, Clinical, Engineering, Life Sciences, Pharma scientific conferences all over the globe annually with the support of more than 1000 scientific associations and 30,000 editorial board members and 3.5 million followers to its credit.

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Reported cardiovascular events during laparoscopy in term and preterm neonates

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INTRODUCTION (1):

- Laparoscopy is progressively performed in Pediatric Surgery, also in neonates and small infants
- Lack of knowledge about adverse effects of minimally invasive surgery
- Capnoperitoneum is necessary
- Physiological changes are evident
- Neonates are even more sensitive

INTRODUCTION (2):

- Cardiac anomalies and heart defects are a special situation for laparoscopy

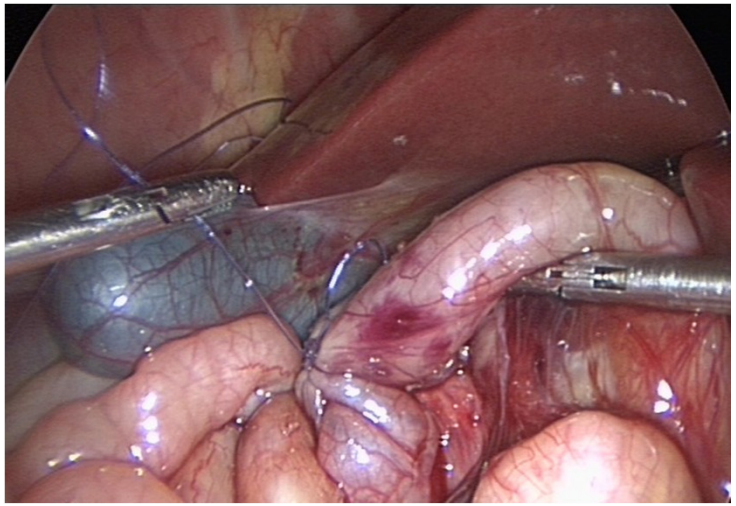
- One reported case of ARDS during laparoscopic inguinal hernia repair in a term boy with PFO (not hemodynamically relevant preoperatively)

Hemodynamic effects of laparoscopic surgery in term and preterm infants with cardiac anomalies. Burgmeier C, Schier F.

Pediatr Surg Int. 2013 Jun;29(6):587-90

INTRODUCTION (3):

- Increased abdominal pressure and hypercapnia
  → Cardiac output ↓ and peripheral vascular resistance ↑
- These impacts may cause hypoxemia, hypotension, acidosis and hypercapnia
- Limited data regarding cardiovascular complications implied by laparoscopy is available



AIM AND METHODS:

- Review of the literature
- Reported cardiovascular events during laparoscopic procedures in term and preterm neonates
- PubMed, Medline and ScienceDirect

RESULTS (1):

- Four single case reports
- Cardiovascular events during laparoscopic procedures
- Two term and two preterm neonates
- Laparoscopic pyloromyotomy (n = 2) and laparoscopic repair of duodenal atresia (n = 2)

RESULTS (2):

Case report 1:

- Preterm boy (1-day old)
- Laparoscopic repair of duodenal atresia
- PDA

- Developed bradycardia, hypotension, desaturation and pulseless electrical activity => CPR

Cardiac arrest in the neonate during laparoscopic surgery.
Lalwani K1, Aliason I.
Anesth Analg. 2009 Sep;109(3):760-2

RESULTS (3):

Case report 2:

- Preterm boy (3-weeks old)
- Laparoscopic pyloromyotomy
- No reported cardiac anomalies

- Bradycardia, hypotension, desaturation

Carbon dioxide embolism in a 3-week-old neonate during laparoscopic pyloromyotomy: a case report.

Kudsi OY1, Jones SA, Brenn B.

J Pediatr Surg. 2009 Apr;44(4):842-5

RESULTS (4):

Case report 3:

- Term boy (3-day old)
- Laparoscopic repair of duodenal atresia
- PDA and PFO

- Desaturation, pulseless electrical activity => CPR

Pneumoperitoneum for neonatal laparoscopy: how safe is it?
Olsen M1, Avery N, Khurana S, Laing R.
Paediatr Anesth. 2013 May;23(5):457-9

RESULTS (5):

Case report 4:

- Term girl (12-day old)
- Laparoscopic pyloromyotomy
- PFO

- Cardiac arrest => CPR

Gas embolus and cardiac arrest during laparoscopic pyloromyotomy in an infant.

Taylor SP, Hoffman GM.

Can J Anaesth. 2010 Aug;57(8):774-8

RESULTS (6):

- In all four neonates gas embolism through a patent umbilical vein was assumed to be responsible for the cardiovascular events
- All neonates were successfully resuscitated
- No neurological or cardiopulmonary sequelae
- Persistent fetal ciruculation in three of four patients

CONCLUSION:

- Gas embolism (carbon dioxide or air) is a rare but serious complication
- Risk factors: persistent umbilical vein + injury and persistent fetal ciruculation

Thanks' for your kind attention!!!!!!



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