

SURGICAL PATHOLOGY AND OUTCOMES IN EXTREMELY PRETERM INFANTS REQUIRING LAPAROTOMY

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Aim of study: A high requirement for laparotomy in extremely preterm infants (born <26 weeks gestational age) has been previously reported. Whilst the most frequently reported indication for laparotomy in the literature is necrotising enterocolitis (NEC), other pathologies exist. We aimed to investigate the cause of surgical pathology, incidence of subsequent surgical procedures, and the outcome of extremely preterm infants requiring laparotomy before neonatal discharge.

Methods: Institutionally approved, retrospective review of neonates born within a UK regional neonatal network at <26 completed weeks gestation that required a laparotomy over a 9 year period (2007-2015). Data was recorded from neonatal discharge summaries, histopathology and radiology reports, and operation notes.

Results: Of 381 neonates born at <26 weeks gestation, laparotomy was performed in 72 (19%). Median gestation was 24+5 (range: 23+1-25+6); median birth weight was 692g (range 430-1100). Surgical pathology encountered included spontaneous intestinal perforation (22), NEC (25), previously sealed intestinal perforation (3), midgut volvulus (1), strangulated inguinal hernia (1), milk curd obstruction (8), and meconium ileus of prematurity (5). Negative laparotomy for acute abdomen was performed in 7. Twenty-four (33.3%) neonates had formation of a stoma. Seventeen neonates (24%) required further laparotomies (Table).

There was a high requirement for non-gastrointestinal surgery in this group with 31/72 (43%) undergoing ligation of patent ductus arteriosus and 25/72 (35%) requiring laser therapy for retinopathy of prematurity.

Overall 54/72 infants (75%) survived to discharge; median total length of stay for survivors was 128 days (range 78-193).

Conclusion

One in five neonates born extremely preterm required a laparotomy. Underlying pathology was NEC in only one-third of cases. A quarter required repeat laparotomy, many also required non-gastrointestinal procedures. Despite this three quarters of these infants survived to discharge. These data are important for parental counselling and organisation of neonatal services.

Table: Indication for further laparotomy in 17 infants

Indication	N
further bowel perforation	4
adhesional obstruction	4
anastomotic leak/stenosis	4
NEC	3
non-adhesional obstruction	1
stoma closure	1