

## 25.4 Surgical intervention in necrotizing enterocolitis in neonates with symptomatic congenital heart disease

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**Purpose:** The commonly accepted indication for surgical intervention in necrotizing enterocolitis (NEC) is perforation of bowel. In this study, the indication and the role of surgery is assessed in neonates born with symptomatic congenital heart disease (CHD).

**Methods:** Records of neonates admitted into two referral hospitals in Hong Kong between Jan 1981 and Dec 1 1997 with symptomatic CHD who subsequently developed NEC were reviewed.

**Main results:** Of 850 neonates with CHD admitted during the period, 30 patients developed NEC (3.5%). Seventeen of them suffered from cyanotic heart disease whereas 13 suffered from acyanotic disease. The average Apgar scores at one and five minutes were 7.5 and 8.6 respectively. The mean gestational age was 37.7 weeks and the mean birth weight was 2.5 kg. The mean age at which NEC developed was 16 days. The most common clinical presentation was abdominal distension (75%) and per rectal bleeding (38%). The overall mortality rate in the proven cases of NEC was 57%. After excluding the suspected NEC cases (stage I), it was found that surgery in the proven NEC cases without perforation, i.e. stages II and IIIA, resulted in a higher survival rate than those managed medically (75% vs 44%).

**Conclusions:** Neonates with symptomatic congenital heart disease who develop NEC belong to a unique group of mature babies with reasonable birth weights and Apgar scores, unlike the common NEC patient population. The mortality rate of these patients is extremely high and a modified management approach is required. Surgical intervention may be indicated at a much earlier stage of proven NEC before gut perforation occurs.

## 25.5 Early experience with partial left ventriculectomy for end-stage dilated cardiomyopathy

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Partial left ventriculectomy (PLV) is a new surgical therapy for end-stage dilated cardiomyopathy in which the volume of left ventricular chamber is surgically reduced, hence resulting in reduced wall tension and improving myocardial contractility.

Four patients (mean age 59 years, range 56 to 62) underwent PLV. Preoperatively, all four patients had advanced symptomatic congestive heart failure due to idiopathic cardiomyopathy (n=2), aortic valve disease (n=1) and ischaemic heart disease (n=1). Interpapillary (n=1) or extrapapillary (n=3) types of PLV resection were performed, the later necessitating mitral valve replacement. Associated procedures were aortic valve replacement (n=2) and coronary artery bypass grafting (n=1).

All four patients were weaned off cardiopulmonary bypass successfully, and were extubated 25±2 hours following surgery. Twenty-four hours after surgery, cardiac output increased from 2.0±0.2 to 4.1±0.3 L/min per minute ( $p=0.001$ ). One patient died 3 weeks following surgery due to acute bacterial mediastinitis. Average hospital stay for the other three patients was 14 days. At a follow-up up to 12 months, all three surviving patients are in NYHA functional class I. Repeated transthoracic echocardiography confirmed persistent improvement in LV size and contractility.

Experience to-date indicates that PLV is associated with favourable clinical outcome and may represent a new hope for patients with end-stage dilated cardiomyopathy.