Staged Repair Improves Outcome of High-Risk Premature Infants with Esophageal Atresia and Tracheoesophageal Fistula

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Twenty-five consecutive high-risk premature infants weighing less than 2000 g at birth (Waterston class C) were treated for esophageal atresia and tracheoesophageal fistula (TEF). Four patients with associated trisomy 18 were excluded for whom definitive surgery was denied. The overall survival rate was 81% (17 of 21 infants).

Of significance is that 14 patients with esophageal atresia and TEF underwent initial gastrostomy tube placement followed by either primary anastomosis or staged repair, depending on clinical status. Four infants with TEF and a mean weight of 1628 g were considered low risk and underwent primary anastomosis with 100% survival. In 3 of these 4 patients, however, significant complications developed, including esophageal leak with subsequent stricture; 2 infants required Nissen fundoplication.

Ten infants with TEF and a mean weight of 1759 g were considered at high risk based on associated anomalies and pulmonary complications and were treated with staged repair. In this group, 3 neonates died before the definitive repair could be performed.

Of the 7 who survived, only 2 had postoperative complications, and only 1 required Nissen fundoplication (14%).

Five other patients who had esophageal atresia without TEF underwent staged repair with 100% survival. An additional patient with H-type TEF underwent transcervical ligation, and another a congenital esophageal stenosis (type F) died of intracerebral hemorrhage before institution of surgical therapy.

Although the number of patients in this series is small, the data suggest that premature infants with esophageal atresia and TEF incur less morbidity when treated by a staged repair as opposed to primary anastomosis. In addition, staged repair seems to reduce the necessity for subsequent Nissen fundoplication.