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Tracheo-bronchial Angles in Neonates

To the Editor—Kubota *et al.*¹ recently reported that the left tracheo-bronchial angle is greater than the right in infants and children. However, neonates were not included in their study, and there were only a few reports on the tracheo-bronchial angles in neonates.^{2,3} We measured the tracheo-bronchial angles in neonates, including both premature and full-term infants, and examined if there is any change of the angles with regard to the gestational age.

One hundred and four neonates (52 boys and 52 girls) admitted to the neonatal ICU, between the gestational ages of 23 and 42 weeks, were the subjects of the study. Neonates with anatomical abnormalities in the chest, such as pneumothorax, diaphragmatic hernia, or mediastinal disease, were excluded. Chest radiograph films were taken, with all neonates in the supine position on admission. The right and left bronchial angles (RBA, LBA), which consisted of the axis of the trachea and each main stem bronchus, and the tracheal bifurcation angle (TBA) were measured from the films. The neonates were divided into two groups according to the gestational age, *i.e.*, a premature infant (<37 weeks) group and a full-term infant (≥37 weeks) group. Student's *t* tests were utilized for statistical analysis, and *P* < 0.05 was considered significant. Results are shown in table 1.

The left tracheo-bronchial angle ($47.1 \pm 5.5^\circ$) was significantly greater than the right ($31.4 \pm 5.6^\circ$) in neonates. The RBA, LBA, and TBA showed no significant differences between the premature and full-term infants.

The results obtained in our study were similar to those reported previously in neonates (RBA 30° , LBA 47°)² and infants and children (RBA $31 \pm 5^\circ$, LBA $46 \pm 5^\circ$).¹ Placzek and Silverman³ also reported identical observations in 19 neonates. Since there were no differences in the angles between the premature and full-term infants, there seemed to be little changes in the angles during maturation. In conclusion, even in premature infants, the LBA is greater than the RBA, and the incidence of accidental right endobronchial intubation must be higher than that of the left.

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TABLE 1. Results (Mean ± SD, Degree)

Group	Cases	RBA	LBA	TBA
Premature infants	58	31.6 ± 5.7	47.1 ± 5.7	78.7 ± 8.9
Full-term infants	46	31.1 ± 5.5	47.2 ± 5.2	78.1 ± 7.3
Total	104	31.4 ± 5.6	47.1 ± 5.5	78.4 ± 7.3

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