involve a fistula from the trachea to the upper esophageal segment (0.8%) (see Fig. 22-5, *B*) or to both the upper and lower segments (0.7% to 6%) (see Fig. 22-5, *D*).

Diagnostic Evaluation

Although the diagnosis is established on the basis of clinical signs and symptoms (Box 22-7), the exact type of anomaly is determined by radiographic studies. A radiopaque catheter is inserted into the hypopharynx and advanced until it encounters an obstruction. Chest radiographs are taken to ascertain esophageal patency or the presence and level of a blind pouch. Films that show air in the stomach indicate a connection between the trachea and the distal esophagus in types C, D, and E. Complete absence of air in the stomach is seen in types A and B. Occasionally fistulas are not patent, which makes their presence more difficult to diagnose. A careful bronchoscopic examination may be performed in an attempt to visualize the fistula.

Box 22-7

Clinical Manifestations of Tracheoesophageal Fistula

Excessive frothy mucus from nose and mouth

Three Cs of tracheoesophageal fistula (TEF):

Coughing

Choking

Cyanosis

Apnea

Increased respiratory distress during feeding

Abdominal distention