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Tracheal Agenesis

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ABSTRACT

Tracheal agenesis, though found to be rare and fatal to date, has been reported with increasing frequency. Tracheal agenesis is a congenital anomaly incompatible with life. We received a fetus which was aborted spontaneously, from the Dept of OG. On dissecting the fetus, we noticed a case of Floyd's type II of tracheal agenesis with broncho-oesophageal fistula, no other anomalies were noted. This case was studied from the embryological perspective.

Keywords: Tracheal agenesis, broncho-oesophageal fistula.

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INTRODUCTION

Tracheal agenesis is a rare and fatal malformation of the lower respiratory tract, that in most cases associated with other congenital anomalies. Tracheal agenesis is a complete or partial absence of trachea due to the failure of development of laryno-tracheal septum. The prevalence of tracheal agenesis is less than 1:50000 with a male to female ratio of 2:1.

CASE REPORT:

We received a fetus aborted spontaneously, from Department of OG, Sree balaji medical college and hospital with parent consent. The fetus was dissected after getting proper research and ethical clearance from the university. As received from the hospital 21 yr old female (PRIMI) in wedlock with a consanguineous spouse since 1year. She was not diabetic, hypertensive, not alcoholic and not used any oral contraceptive pills or drugs during pregnancy. No h/o any fever, irradiation, genetic disorder known in the family.

MATERIALS AND METHODS:

The fetus was fixed in 10% formalin for 10 days and the same was injected through anterior fontanelle for fixing the brain. After fixation, the fetus was dissected under magnifying lens and the light source. Crown-rump length (CRL) was measured using inch-tape.

OBSERVATION:

ON DISSECTION noticed,

1) Broncho-oesophageal fistula (fig 1,2)
2) Tracheal agenesis (fig 3)
3) No other congenital anomalies were noted

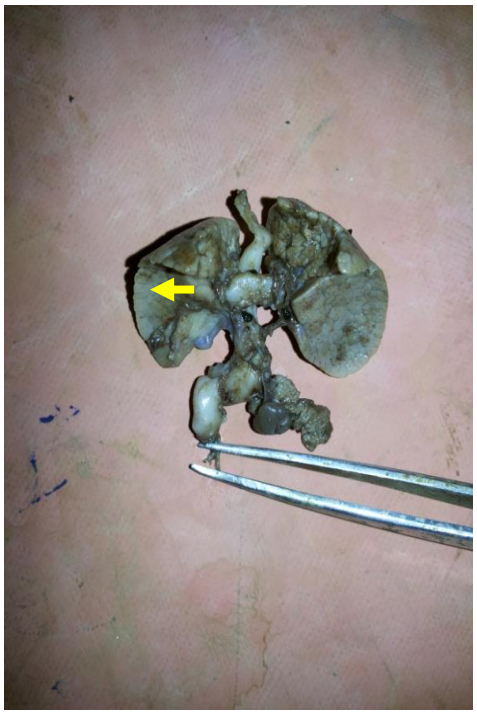

Fig 1

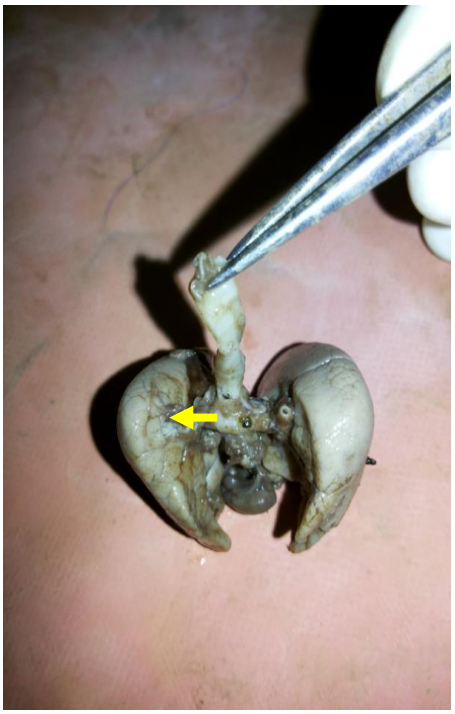

Fig 2

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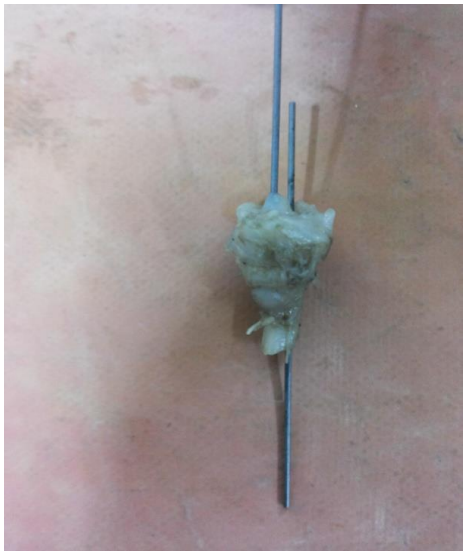

Fig 3

DISCUSSION

Tracheal agenesis was first described by Payne [1] in 1900. In 1962, Floyd et al. classified tracheal agenesis in three anatomic types with incidence of 13%, 65%, and 22%, respectively and defined Type II tracheal agenesis as complete absence of the trachea with the presence of normal bifurcating main bronchi [3]. 94% of cases are associated with other congenital defects including congenital cardiac, genitourinary, gastro-intestinal, pulmonary, CNS, and musculoskeletal anomalies [3,4,5]. Tracheal agenesis (TA) is often associatiated with prematurity and polyhydramnios [2].

The embryological mechanisms behind Type II tracheal agenesis remain controversial, it has been suggested that tracheal agenesis is a result of the abortion of the lung bud outgrowth and delayed formation of the bronchi and lungs via remnant primordial mesenchyme which often attaches to the esophagus [5].

No risk factor for the occurrence of this malformation has ever been suggested. Also, no significant genetic karyotype has been found to correlate with tracheal agenesis.

CONCLUSION

Tracheal agenesis should be suspected in any neonate with a history of hydramnios, respiratory distress, cyanosis and no audible cry, and in those in whom tracheal intubation proves impossible [6]. There is no established medical protocol for life conservation in isolated Type II complete tracheal agenesis. Currently, this anomaly is incompatible with life and future hopes for survival will depend on surgical developments.

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