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Short Communication

Intraoperative presence of right aortic arch in repair of esophageal atresia with tracheoesophageal fistula, Technique of repair through right thoracotomy versus left thoracotomy

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Abstract: Congenital trachea esophageal fistula account for a significant proportion of neonatal surgical emergency admissions. The repair of these patients who also have a right aortic arch remains controversial.A retrospective study of congenital tracheoesophageal fistula patients with right aortic arch between 2010 and 2014 was conducted. We attempted to compare the surgical technique in these patients between right and left thoracotomy.Left sided thoracotomy is better for dealing with patients of right aortic arch as it gives better exposure and results.Left thoracotomy should be considered as the standard approach in these patients if a pre operative diagnosis of additional right aortic arch can be made in these patients of trachea esophageal fistula.
Keywords: Right aortic arch, tracheo esophageal fistula, thoracotomy

INTRODUCTION:

Etiology is unknown & no true genetic influence has been demonstrated but multiple factors must be influencing the embryo at a vulnerable period[1]. A defect at 2p23-p24 chromosomal locus is a probable causative genetic defect. Incidence of twinning is high & familial cases are reported. Incidence is 1:3500 live births[2-4]. Overall incidence of associated anomalies is 50% -70%. VACTERL seen in 25% cases, vertebral, anorectal, cardiac, tracheo-esophageal, renal, limb[5]. Differential diagnosis is pharyngeal psuedodiverticulum, laryngotracheo-esophageal cleft, trachea esophageal fistula without atresia[6, 7]. Chest x-ray of baby with red rubber tube in AP & LATERAL view is diagnostic.

MATERIAL & METHOD

A retrospective review was performed in EA/TEF patients between 2010 and 2014. A total of 751 patients with EA/TEF were diagnosed. Sixty one (8%) patients had right aortic arch. The chest was accessed through the right side in all patients. Successful repair was accomplished in 22 cases out of 61. Right thoracotomy wound was closed in 39 cases due to technical difficulties posed by right aortic arch and associated congenital heart disease with vascular anomalies. Left thoracotomy was done in same sitting with successful repair.

RESULT

The incidence of right aortic arch was found to be higher in our study(8%) than previous studies. Right thoracotomy was performed successfully in 22 patients versus 39 cases through left thoracotomy.Total mortality was thirty patients out of sixty one (50%).

Nineteen patients died due to multiple congenital anomalies.25% (10/39) of patient died having left thoracotomy v/s (9/ 22) i.e. 41% of right thoracotomy. Eleven patients died due to septicemia and bleeding (7/39, 31% of left thoracotomy v/s 4/22, 18% of right thoracotomy).

Thirty one patients had no complication after operation and were discharged on breast feeding (22/39, 56% of left thoracotomy v/s9/22, 41% in right thoracotomy). Oesophageal dilatation was done for anastomotic stricture in required cases diagnosed by dye study (oesophagogram) using tazogastro 60% oral solution. On follow-up dilatation was required in 10 (30%) cases, i.e.; 6/22 (27% with left thoracotomy v/s 4/9 (44%) with right thoracotomy).

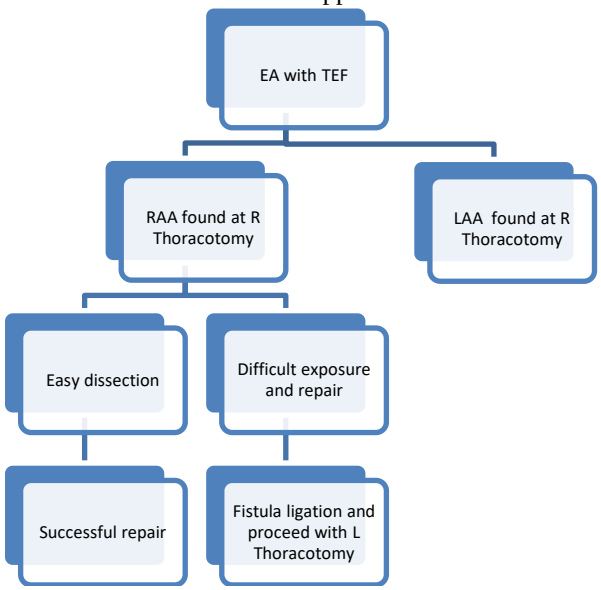
Table-1: Comparison between Right thoracotomy Vs left thoracotomy

	Total	**Right Thoracotomy**	**Left Thoracotomy**
No. of patient operated	61	22	39
Survival	31	9 (41%)	22 (56%)
Deaths	30	13 (59%)	17(43%)
Deaths due to associated anomalies	19	9 (41%)	10 (25%)
Deaths due to sepsis & bleeding	11	4 (18%)	7(31%)

DISCUSSION

Experience with 61 patient of right aortic arch out of 751 patients point to technical difficulties by RAA. These difficulties markedly alter the final clinical outcome of these patients in term of morbidity and mortality.When the aortic arch is on right side, the upper esophageal pouch lies to the left side of aortic arch and distal TEF lies to the left of the descending aorta.

These patients usually have wide gap with upper pouch near the thoracic inlet and fistula enters the main stem bronchus.All these factors contribute to significant difficulties in exposure and repair of esophagus from the right side of mediastinum.More over RAA was associated with congenital heart diseases, aberrant vessels and dextrocardia.On follow up, postoperative stricture was more common with patients managed with right thoracotomy than with left approach.



CONCLUSION

In comparison to the right thoracotomy, left thoracotomy is better in presence of right sided aortic arch in cases of esophageal atresia with tracheo - esophageal fistula.

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