

TRACHEAL SIZE AFTER FETAL ENDOSCOPIC TRACHEAL OCCLUSION FOR CONGENITAL DIAPHRAGMATIC HERNIA: MEDIUM-TERM FOLLOW-UP

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Aim of the study: to evaluate the tracheal diameter of patients with congenital diaphragmatic hernia (CDH) undergoing fetal endoscopic tracheal occlusion (FETO), in comparison to that of patients not treated prenatally.

Methods: the tracheal diameters of patients treated for CDH in our Center between January 2012 and August 2016 were measured on the chest x-rays routinely performed during the follow-up. The post-operative x-ray and x-rays taken at 1, 3, 6, 12, 24, and 36 months were evaluated. The tracheal diameter in each x-ray was measured at the level of T1, at the carina and at the level of maximal tracheal dilation between T1 and the carina. Patients were divided in two groups: group 1 for patients who did not receive the prenatal treatment and group 2 for patients who received the FETO procedure. The tracheal diameter at T1, at the carina and the maximal diameter were compared between groups. A p-value < 0.05 was considered significant.

Main results: in the study period 72 CDH were born in our Center. Group 1 consisted of 42 patients, with a survival rate of 83% (35/42), while Group 2 consisted of 30 patients with a survival rate of 43% (13/30). The maximum tracheal diameter was significantly higher in Group 2 at all ages. On the contrary no significant difference was observed between the two groups considering the diameter at T1 and at the carina at almost all ages. All results are summarized in Table 1.

Conclusions: FETO procedure is leading to an increase in the survival of severe CDH, thus determining a new population of patients with different anatomical features that have to be taken into account at follow-up. The increased tracheal diameter of these patients seems to persist at medium-term follow up. The clinical impact of this finding is under investigation.

	T1 (diameter mean value, mm)			Carina (diameter mean value, mm)			Max diameter (diameter mean value, mm)		
	Group 1 (no-FETO)	Group 2 (FETO)	p-value	Group 1 (no-FETO)	Group 2 (FETO)	p-value	Group 1 (no-FETO)	Group 2 (FETO)	p-value
Post-op	-	-	-	4.97	5.31	NS	4.92	6.90	<0.0001
1 month	4.93	4.62	NS	5.14	5.93	0.04	5.06	7.86	<0.0001
3 months	5.69	5.23	NS	6.02	6.86	NS	5.95	9.5	<0.0001
6 months	6.28	6.57	NS	6.6	7.65	NS	6.55	9.42	0.0005
12 months	6.82	6.41	NS	7.4	6.85	NS	7.23	9.37	0.0005
24 months	7.01	7.24	NS	7.55	8.4	NS	7.49	10.16	0.0003
36 months	8.21	8.22	NS	9.13	9.8	NS	9.11	12.86	0.0001

Table 1