



# Association of operative approach with postoperative outcomes in neonates undergoing surgical repair of esophageal atresia and tracheoesophageal fistula

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## OBJECTIVE & INTRODUCTION

Minimally invasive surgery (MIS) is gaining traction as a first-line approach to repair congenital anomalies. This study aims to evaluate outcomes for neonates undergoing open versus MIS repairs for esophageal atresia/tracheoesophageal fistula (EA/TEF).

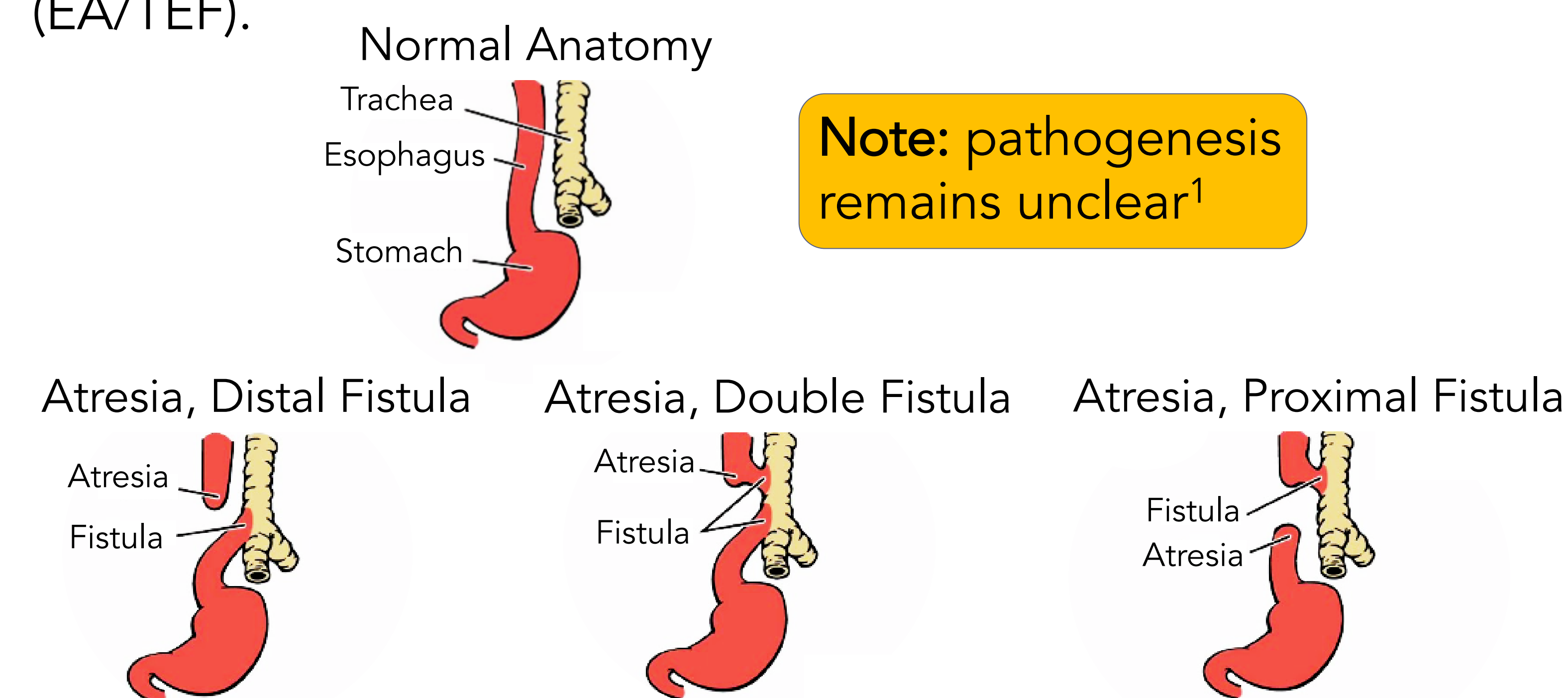
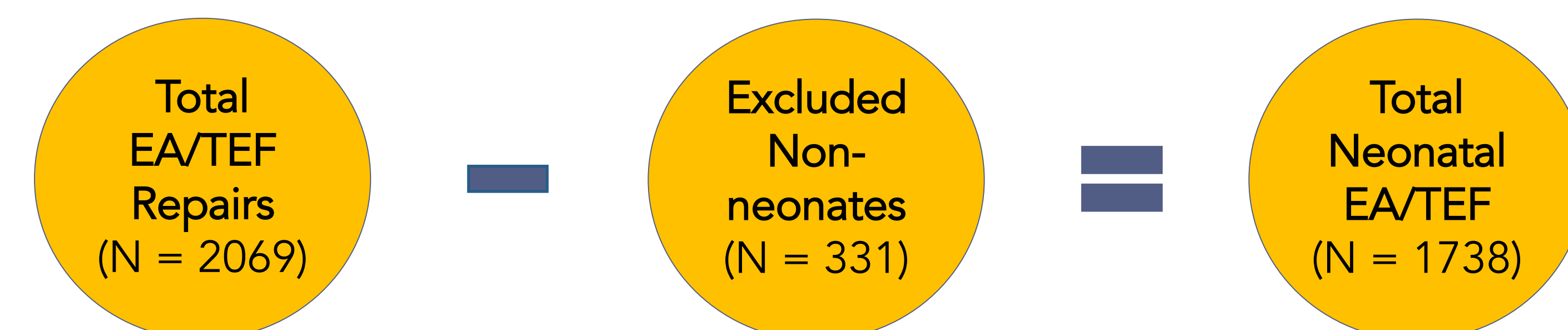


Figure 1: Anatomy of EA/TEF and its variations<sup>2</sup>

## METHODS

Neonates undergoing EA/TEF repair from 2013-2020 were identified using the National Surgical Quality Improvement Program-Pediatric (NSQIP-P) database.



Baseline patient characteristics and post-op outcomes were assessed using Pearson's chi square test, Fisher's exact test, Mann-Whitney U test, and Kruskal-Wallis test where appropriate (Table 1).

Post-op outcomes were further assessed using 1:1 propensity score matching without replacement using a 0.01 caliper (Table 2).

Proportions of operative approach over time were analyzed using a Cochran-Armitage trend test (Figure 2).

## RESULTS

Variable	Open	MIS	P-value
Morbidity	381 (27.4)	84 (24.4)	0.259
Mortality	27 (1.9)	6 (1.7)	0.808
Days on Vent	4 (2-9)	4 (2-9)	0.5197
Reoperation	112 (8.0)	43 (12.5)	<b>0.01</b>
Readmission	16 (1.2)	6 (1.7)	0.38
Length of Stay	20 (14-32)	19 (14-28)	0.1942
Operative Time	173 (132-234)	209 (166-272)	<b>&lt;0.0001</b>

Table 1: Post-op outcomes before propensity score match

Variable	Open	MIS	P-value
Morbidity	88 (25.7)	84 (24.5)	0.72
Mortality	11 (3.2)	6 (1.7)	0.22
Days on Vent	3 (2-8)	4 (2-9)	0.27
Reoperation	12 (3.5)	27 (7.9)	<b>0.020</b>
Readmission	7 (2.0)	9 (2.6)	0.61
Length of Stay	19 (24-27)	19 (14-28)	0.48
Operative Time	173 (131-232)	209 (166-273)	<b>&lt;0.001</b>

Table 2: Post-op outcomes after propensity score match

## ANNUAL MINIMALLY-INVASIVE EA/TEF REPAIR USAGE

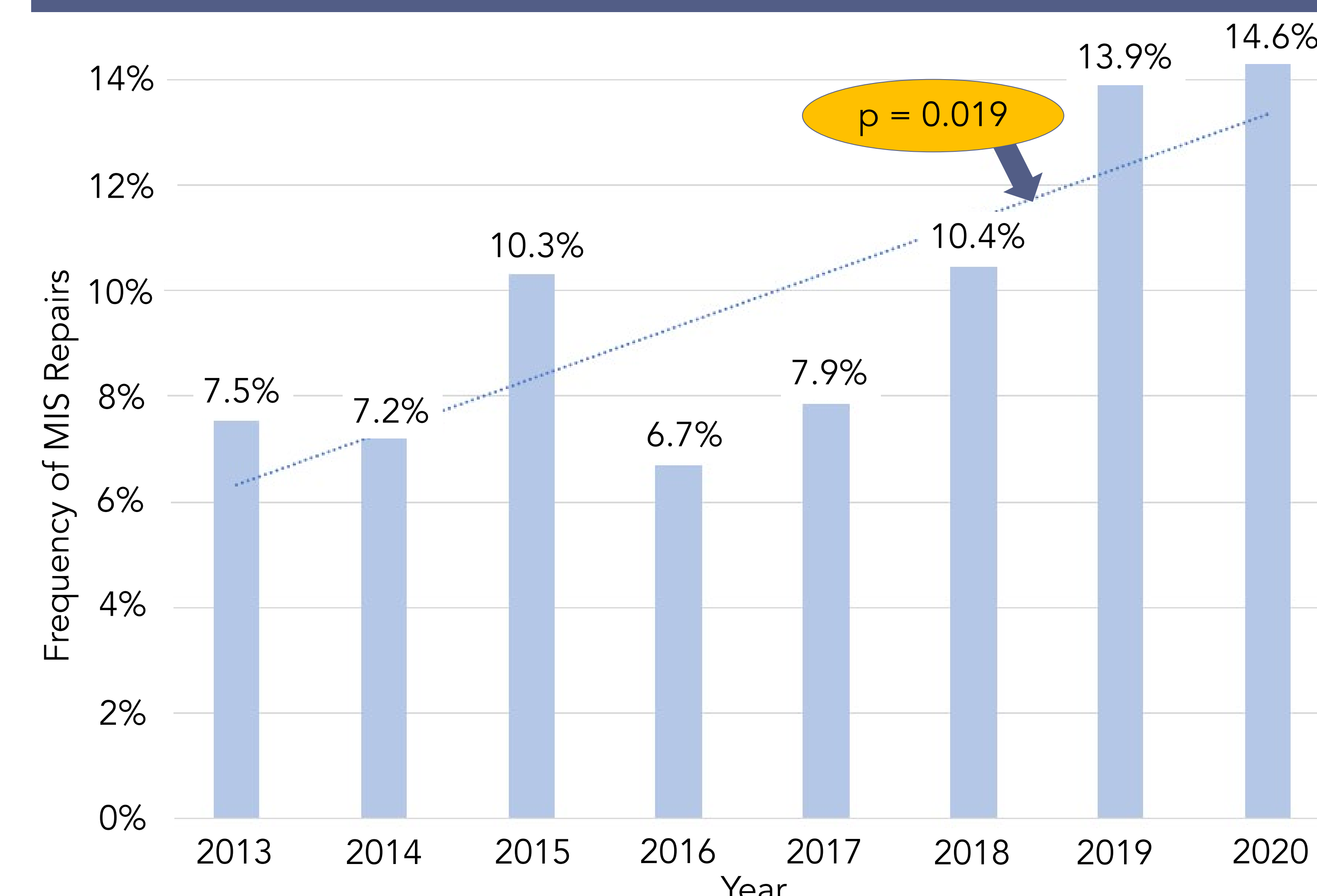


Figure 2: MIS utilization over the years with trend line

## CONCLUSION

MIS is gaining traction as a first-line approach for neonates with EA/TEF but appears to be associated with a higher rate of reinterventions. Further studies evaluating both short- and long-term outcomes after EA/TEF repair are needed.

## REFERENCES

<sup>1</sup>de Virgilio, *Surgery 2<sup>nd</sup> Edition*. p. 425

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