

Principal investigators

Pr Frédéric GOTTRAND

Service de Gastroentérologie, Hépatologie et Nutrition Pédiatrique
Centre de Référence des Affections Chroniques et Malformatives de l'Œsophage
(CRACMO)
Hôpital Jeanne de Flandre - CHU Lille
FRANCE

Dr Matthieu ANTOINE

Service de Gastroentérologie, Hépatologie et Nutrition Pédiatrique
Hôpital Jeanne de Flandre - CHU Lille
FRANCE

SUMMARY

Esophageal atresia is a rare congenital malformation involving 1 on 2500 children. During their endoscopic follow-up, mucosal bridges may be diagnosed at the anastomotic site. The aim of our study is to collect and characterize the cases of mucosal bridges diagnosed during endoscopic procedures performed in children with esophageal atresia aged 0 to 18 years. This is a retrospective, multicentric study recording in a standardized form patient's characteristics, mucosal bridge diagnosis circumstances (endoscopic procedure indication), endoscopic management performed, patient's follow-up and potential mucosal bridge recurrence.

Key words: esophageal atresia, anastomotic site mucosal bridge, digestive endoscopy

GENERAL BACKGROUND

Esophageal atresia is a rare congenital malformation involving 1 on 2500 children. In France, guidelines (*Programme National de Dépistage et de Soins* (PNDS)) published in 2018 (1) recommend an esophagogastroduodenoscopy should be performed at the age of 1, 10 and 16-17 years, then every 5-10 years during adulthood (risk of peptic esophagitis, Barrett esophagus, esophageal carcinoma). Additional endoscopic procedures may be necessary during the medical follow-up, depending of patient symptoms, especially dysphagia. Esophageal mucosal bridges are a rare entity, resulting of traumatism (nasogastric tube), inflammation (Crohn's disease, lupus), infections (HIV, HSV, esophageal candidosis, tuberculosis), esophageal varices sclerotherapy (2). A few cases (n = 4) of mucosal bridges have been reported in children followed for esophageal atresia (3,4). For all patients endoscopic indication was dysphagia. Mucosal bridges occurrence may be the consequence of iatrogenic traumatism (nasogastric tube), chronic esophageal inflammation by gastroesophageal reflux disease or food

stasis due to esophageal dysmotility (3). When endoscopic resection was performed, with argon plasma coagulation (3) or miniature stapler (4), symptoms improved. Other electrocoagulation technics (5) used for mucosal bridges management in adult or other etiologies, were successfully performed, especially endoscopic knives (6–8).

OBJECTIVES

- To describe diagnosis circumstances of mucosal bridges in children followed for esophageal atresia and the associated symptomatology.
- To describe endoscopic management procedures performed for mucosal bridges diagnosed in children followed for esophageal atresia: technics, efficacy, safety.
- To assess spontaneous or after endoscopic procedure mucosal bridges evolution, clinically and endoscopically speaking.

RESEARCH TOOLS

1. Study population

A standardized form will be sent to different pediatric centers being in charge of children followed for esophageal atresia. Patients fulfilling inclusion criteria will be retrospectively included.

Inclusion criteria:

- Child followed for esophageal atresia
- Aged 0 to 18 years at the time of the endoscopic procedure
- Endoscopic procedure(s) performed between 01.01.1995 and 01.31.2021
- Esophageal mucosal bridge diagnosed during endoscopic procedure, with or without endoscopic management, with or without further endoscopic follow-up.

Exclusion criteria:

- Mucosal bridge diagnosed in a child who is not followed for esophageal atresia
- No mucosal bridge diagnosed during the endoscopic procedure in a child followed for esophageal atresia

One individual form have to be filled for each child including information about endoscopy findings at the time of mucosal bridge diagnosis, and about eventual later endoscopic inspection(s) during the medical follow-up.

2. Study form

The internet link guiding to the form (LimeSurvey online survey) will be sent by email on 03.01.2021. Form responses will be collected until 04.30.2021. Email reminders will be sent every 2 weeks until survey cloture.

3. Authorization

This study has been submitted to the approbation of the Ethic Committee of the Gastroenterology, Hepatology and Nutrition French Speaking Groupe (*Groupe Francophone*

d'Hépatologie, Gastroentérologie et Nutrition Pédiatrique, GFHGNP). Please find attached the information letter for the parents.

BIBLIOGRAPHY

1. Haute Autorité de Santé HAS. Atrésie de l'œsophage. Saint-Denis La Plaine
2. Mukherjee M, Oh J, Khdair A, Grosman I. Esophageal mucosal bridges associated with idiopathic esophageal ulcer treated with argon plasma coagulation. *Gastrointest Endosc.* 2008 ; 68:387-9.
3. Chapuy L, Pomerleau M, Perreault P, Faure C. Mucosal bridge as a cause of dysphagia after surgery for esophageal atresia. *Can J Gastroenterol Hepatol.* 2014 ; 28:350.
4. Kawano T, Muensterer OJ. Using a Miniature Stapler to Divide a Mucosal Bridge at the Anastomosis after Gastric Pull-up for Iatrogenic Tracheoesophageal Fistula. *Eur J Pediatr Surg Rep.* 2018 ; 6:108-10.
5. Mavrogenis G, Hochberger J, Deprez P, Shafazand M, Coumaros D, Yamamoto K. Technological review on endoscopic submucosal dissection: available equipment, recent developments and emerging techniques. *Scand J Gastroenterol.* 2017 ; 52:486-98.
6. Perisetti A, Banerjee D, Tharian B. Endoscopic Resection of Esophageal Mucosal Bridge. *Gastroenterology.* 2018 ; 154:2033-4.
7. Abbas MI, Wilson CC, Biko DM, Goldman MD. Esophageal mucosal bridge in a 7-year-old. *J Pediatr Gastroenterol Nutr.* 2014 ; 58:1.
8. Hanai H, Honda S, Sugimoto K, Kageoka M, Iwasaki H, Higuchi R, et al. Endoscopic therapy for multiple mucosal bridges in the esophagus of a patient with Crohn's disease. *Gastrointest Endosc.* 1999 ; 50:715-7.