

# Incidence of Dysplastic Barrett's Esophagus and Esophageal Adenocarcinoma after Sleeve Gastrectomy: A Population-based Cohort Study

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## Background

Sleeve gastrectomy(SG) is the most commonly performed bariatric surgery worldwide, however it is associated with an increase in gastroesophageal reflux disease(GERD) a known risk factor for Barrett's esophagus(BE) and esophageal adenocarcinoma(EAC). The true impact of SG on BE and EAC remains unknown and a source of concern.

## Objective

We sought to investigate the incidence of BE and EAC following SG in the Quebec population.

## Methods

We designed a population-based cohort study comparing all morbidly obese patients who underwent a reflux-prone procedure[SG and biliopancreatic diversion with duodenal switch(BPD-DS)] in the province of Quebec between 2006-2013. The comparison group was all patients who had Roux-en-Y gastric bypass(RYGB) during the same period. The main outcome was development of esophageal neoplasia (EAC and dysplastic BE). Cox proportional hazard was used to obtain hazard ratio.

## Results

9,192 bariatric procedures were identified. Of those, 4,289 surgeries were in the reflux-prone group (2,426 SG; 1,863 BPD-DS) and 853 in the control group. The incidence of esophageal neoplasia in the study cohort was 0.049% per year(N=19). There were 16 cases in the reflux-prone group and 3 in the control group (incidence rate of 0.049% and 0.046% per year respectively). When adjusting for age, sex, Charlson comorbidity index and GERD pre-op; the hazard ratio for esophageal neoplasia was 0.93(0.27-3.22). The median follow-up was 7.4(3.6) years.

## Conclusion

There does not appear to be a difference in the rate of esophageal neoplasia between a reflux-prone bariatric procedure involving SG and RYGB. This may be explained by the rare nature esophageal neoplasia and slow progression of BE to invasive cancer.

Figure 1. Kaplan Meier curve on cumulative incidence of esophageal neoplasm

