**BACKGROUND-AIM**

Survival of patients (pts) with esophageal cancer has been constantly increasing mainly thanks to the use of neoadjuvant treatment. In our recently published experience (155 pts) we achieved an overall survival of 43%. Functional aspects after surgery are gaining primary importance in terms of quality of life for long-term survivors.

Routinely, pyloroplasty (PP) has been used to improve gastric emptying, in order to reduce post-operative delayed gastric emptying with consequently a higher risk of ab ingestis pneumonia and anastomotic leakage.

We analyzed the importance of the scintigraphic data for the decision making of a routinely performing PP during Ivor-Lewis esophagectomy in part of a bigger study on a group of pts underwent to a complete functional analysis for liquid and solid emptying, acid reflux and quality of life.

**METHODS**

The study includes 63 pts operated at our institution, for esophageal cancer. Inclusion criteria were: locally advanced carcinoma, R0 resections, at least 6 months of follow-up, no recurrence and no anastomotic stricture. The total number of pts enrolled was 26.

A semisolid balanced meal was labeled with 40 MBq of 99mTc-nanocolloid. Pts were positioned seated close to gamma camera. To study gastric emptying first we acquired dynamic images of 60 sec/frame for 30 minutes, then we acquired a series of static images of 60 sec/frame every 10 min until 120 min.

**RESULTS**

Among the 26 pts included in the study, in 15 PP was performed, while in 11 was not done (NPP).

Results of the study evidenced that the mean percentage of radioactivity in the gastric conduit at 30 and 120 minutes were $43\pm30.19$ and $10.63\pm9.08$ in PP group and $41.09\pm29.5$ and $16.08\pm17.7$ in NPP group (p-value >0.05).

Mean half-life ($T_{1/2}$) was lower in PP group ($29.03\pm22.32$ minutes) than in NPP group ($40.64\pm51.48$ minutes), but the difference was not statistically relevant (p-value=0.5). Nevertheless analyzing the $T_{1/2}$ box and whisker plot of the 11 NPP pts is notable a great dispersion with a large 25-75 percentile box. This was due to 3 pts that had a mean $T_{1/2}$ of 106 min compared to a mean $T_{1/2}$ of 6.5 min for the other 8.

**CONCLUSION**

Our results evidenced the importance of scintigraphy as the main examination in the evaluation of gastric conduit emptying with the capacity of discriminating between a good or a delayed emptying. With the scintigraphic results we demonstrated a non-inferiority in the gastric conduit emptying of the NPP group compared to the PP for solid meals.

Our results did not evidence a statistically relevant difference between the two groups. Nevertheless 3 NPP pts had a longer $T_{1/2}$ compared to the other 8. This slow emptying group could be defined as a potentially “high risk pneumonia” in the early post-operative period.

Our interpretation of this study’s and literature’s results is that, in the majority of pts, a PP is an overtreatment with possible post-operative morbidity and increasing of biliary reflux and dumping syndrome. On the other hand we should be able to identify the “high risk group” that should be treated.