Letter to the Editor

Management of esophagogastric anastomotic leaks

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We read with interest Junemann-Ramirez and colleagues’ article [1] on esophagogastric anastomotic leaks and their analysis of predictive factors, management and survival. We agree with the authors that esophagogastric anastomotic leaks are the most devastating of complications after esophageal resection and that they carry high morbidity and mortality rates. The choice of surgical procedure has a lot to do with the ultimate outcome of the patient. We feel that the consequences of an anastomotic leak are far worse with an intrathoracic anastomosis compared with a neck anastomosis. The Ivor Lewis esophagectomy has neither the advantages of a transthoracic esophagectomy (in avoiding a thoracotomy) nor does it have the advantages of a transthoracic (three-hole) total esophagectomy (where a neck anastomosis avoids the morbidity of mediastinitis in case of a leak). A three-hole esophagectomy also enables radical supracarinal mediastinal lymphadenectomy.

The authors’ conclusions that patients treated conservatively fared better than those who underwent surgical intervention could clearly be explained by a selection bias as it is likely that clinically stable patients would have been treated conservatively and sicker patients with mediastinitis would have been reoperated. We also fail to understand how a pyloric drainage procedure could reduce anastomotic leaks—decompression of the gastric tube could easily and effectively be achieved by nasogastric tube decompression. In our unit (we perform an average of 160 esophagectomies a year), we perform a three-hole total esophagectomy in all patients with a neck anastomosis, but do not perform a formal pyloric drainage procedure. None of the leaks we encountered could be explained by non-performance of a gastric drainage procedure. Most true anastomotic leaks in our unit are managed conservatively as the leak gets localized in the neck with no signs of mediastinitis. Gastric tube necrosis or ischemia, on the other hand, are managed aggressively by immediate surgical reoperation with disconnection of the anastomosis with reconstruction by a coloplasty as an interval surgery [2]. Needless to state, the latter group fare worse than the former.

References


Accordingly, many covered biases can be implicated in raising AF incidence with On-pump ACG:

- Off-pump revascularisation accounts for a target therapy attempted to revascularise the significant stenoses, definition criteria of which remain controversial, while the luxury of arresting the heart by means of On-pump ACG incite to more deliberate revascularisation. As the amount of attendant systolic leakage of coronary perfusion is inversely related to the stenosis degree [3], leads more deliberate revascularisation to an increased likelihood of postoperative AF with off-pump ACG.
- The nature of grafts might influence the likelihood of postoperative AF. Some segments of reversed saphenous veins can be provided by valves that avoid systolic leakage of coronary perfusion in comparison to the arterial grafts unequipped with [5].

When our pathophysiological pathway proves to be well founded, then the debate will centre hardly upon being skeptical towards reliability of Off-pump procedures, but from a rational point of view, the ongoing challenge would be rather how to achieve coronary revascularisation with arterial grafts able to resume systolic coronary perfusion as in the native epicardial arteries. Such an achievement, however, sounds to appear unconceivable with Off-pump procedures.

In conclusion, it is plain that if all possible involving pathophysiological pathways are not yet investigated carefully, therefore, even the current best available evidence can be called into the question.

References


Reply to the Letter to the Editor

Reply to Aazami and Salehi

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We thank you for your contributions to our study. As excepted, many factors influence the occurrence of atrial fibrillation (AF) after myocardial revascularization. However, when you compare the incidence of atrial fibrillation after on-pump and off-pump myocardial revascularization, the main factor affecting the incidence of AF is the use of cardiopulmonary bypass. The others are secondary factors. The studies comparing the incidence of AF after on- and off-pump myocardial revascularization should be well designed to minimize the effect of secondary factors. The aortocoronary perfusion that can result functional atrial mal-perfusion should be deemed as secondary factor. Since, it always occurs after both on-pump and off-pump surgery, we have not chosen to study the effect of aortocoronary perfusion resulting functional atrial ischemia. Besides, we compare the incidence of AF in patients with single vessel disease in which the indication of surgical revascularization was definite. In our study, almost all patients undergoing complete myocardial revascularization for single vessel disease have had proximal severe long lesions not suitable for angioplasty. So, risk of functional atrial ischemia due to aortocoronary perfusion was not probable in these patients. Accordingly, the effect of graft type that influence the systolic leakage of coronary perfusion was not studied in patients with single vessel disease. The arterial graft (LITA) was used in all patients for revascularization. The overall incidence of postoperative AF in patients with single vessel disease without regarding the method of revascularization was 15.3%.

On the other hand, it was reported in literature that structural and functional changes in the atria commonly seen in elderly population with chronic AF are also prevalent in surgical patients who develope AF after myocardial revascularization. So, Leung et al. suggested that postoperative and chronic AF may have similar pathophysiology [1]. However, postoperative AF generally is not chronic, but aortocoronary perfusion is continuous. Besides, Ak et al. recently reported that preoperative metabolic status of myocardial cells affect the incidence of postoperative AF. They applied histologic examination of atrial tissue sampled before operation and the examination showed that larger sized myolytic vacuoles and apoptotic myocytes were significantly higher in patients with postoperative AF [2]. Therefore, it is still not clear whether preoperative metabolic status of atrial tissue or aortocoronary perfusion occuring after revascularization more significantly affect the incidence of AF.

In conclusion, we agree with you that without well-designed study regarding all possible involving pathophysiological pathways, we cannot answer the question whether or not off-pump myocardial revascularization decrease the incidence of postoperative AF. We believe that our retrospective study was helpful to disclose the correct answer of the question.