In an observational study, Au et al. (1989) [5] assessed the value of using a 20-F paediatric silver tracheostomy tube (instead of the Portex ‘Mini-Trach’ system) in reducing the number of toilet bronchoscopy procedures performed over a four-year period. One hundred and forty-four patients (62 receiving PM and 81 MT for established SR) underwent various thoracic and oesophageal surgery were studied. There was a significant reduction in the rate of toilet bronchoscopy during the four-year period. This reduction could not be directly linked to the use of PM, although the authors believed this is likely. There were five cases of bleeding caused by MT insertion out of which one required reverting to formal tracheostomy, and one sustained airway obstruction by a clot which resulted in cardiac arrest which was successfully resuscitated. There was no in-hospital mortality.

Bonde et al. (2002) [6] identified those at risk of SR after lung resection surgery on multivariate analysis. The authors concluded that SR is more likely to occur in patients who smoke within six weeks of surgery, have a history of ischaemic heart disease or postoperative absence of regional analgesia (COPD and cerebrovascular accident were only risk factors on univariate analysis). In their study, postoperative (not PM) MT was the primary treatment for most patients (92.6%) who developed SR.

MT is not free from complications, however, most of the complications reported in the literature are minor and easily managed such as; minor bleeding, voice change, surgical emphysma, and failure of insertion [2, 4, 7–9]. Major complications include severe haemorrhage requiring ligation or reverting to formal tracheostomy, distal migration of the MT tube into the bronchial tree and tube misplacement and perforation of the oesophagus [8–12]. There are no reports in the literature of any death caused by MT insertion or being in place. MT in general is considered to be a simple, safe, bedside procedure with low risk of complications [4, 7, 8, 13, 14].

7. Clinical bottom line

PM facilitates early and regular suctioning of the tracheobronchial tree during the critical postoperative period. For high-risk patients, PM may be beneficial in preventing retention of secretions and subsequent complications associated with SR. None of the studies were able to demonstrate a significant reduction in mortality, intensive care unit LOS, or hospital LOS.

Although serious and life-threatening complications have been reported in the literature, complications from MT insertion are mostly minor and self-limiting.

References


eComment: Multidisciplinary management of high-risk patients undergoing lung resection

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We read with great interest the article by Abdelaziz et al. [1] highlighting the role of prophylactic minitracheostomy (PMT) in high-risk patients undergoing thoracotomy and lung resection to aid postoperative sputum clearance. It is well-known that minitracheostomy facilitates early and regular suctioning of the tracheo-bronchial tree during the critical postoperative period. However, this procedure is not free from complications, some of the major complications include severe haemorrhage, distal migration of the minitracheostomy tube into the bronchial tree and perforation of the oesophagus [2]. For these reasons and because of evidence that postoperative pulmonary rehabilitation (PPR) significantly improves the sputum clearance, six minutes walk distance, haemoglobin saturation (SaO2), dyspnoea status and forced expiratory volume in the 1 s (FEV1) [3], and considering that PPR is becoming a crucial component of the overall treating strategy in high-risk surgical patients [4], we believe that the PMT could be an overtreatment.

In conclusion we suggest a multidisciplinary approach in the management of high-risk patients undergoing lung resection for non-small cell lung cancer, in which surgeons are a part of the unit care together with the rehabilitation team. Overall, our experience demonstrated that there is place for this cooperation, especially because PPR does not interfere with any oncological follow-up or adjuvant therapy planning.

References


