Abstracts' Service

Impact of Early Coronavirus Disease 2019 Pandemic on Pediatric Cardiac Surgery in China

Shi G, Huang J, Pi M, Chen X, Li X, Ding Y, Zhang H; National Association of Pediatric Cardiology and Cardiac Surgery Working Group

Objective. This study aimed to provide an insight into the impact of the early outbreak of the novel Coronavirus Disease 2019 on the care management for patients with congenital heart disease.

Methods. This study respectively enrolled a cohort of surgical patients who underwent surgery in 2018 (group I), 2019 (group II), and 2020 (group III) and a cohort of follow-up patients who had follow-up in 2017 (group A), 2018 (group B), and 2019 (group C) in 13 children hospitals.

Results. During the Coronavirus Disease 2019 era, there was a significant decrease in total surgical volume and a change in case mix in terms of an increase in the proportion of emergency operations. Decrease in migration scale index was correlated to the decrease in both surgical volume (r = 0.64, P = .02) and outpatient visit volume (r = 0.61, P = .03). There was a significantly higher proportion of patients who had follow-up through the internet or phone in group C (26.4% vs 9.6% in group B and 8.9% in group A; P < .0001). There was no statistical difference in death or rehospitalization among the 3 follow-up groups (P = .49). There was higher parents' anxiety score (P < .0001) and more use of telemedicine (P = .004) in group C compared with groups A and B.

Conclusions. The Coronavirus Disease 2019 pandemic has resulted in a considerable decrease in total surgical volume and a change of case mix, which seems to be related to the strict traffic ban. Follow-up through the online medical service appears to be an effective alternative to the conventional method.

Outcomes with Segmentectomy Versus Lobectomy in Patients with Clinical T1cN0M0 non-Small Cell Lung Cancer

Chan EG, Chan PG, Mazur SN, Normolle DP, Luketich JD, Landreneau RJ, Schuchert MJ

Objective. We hypothesize that segmentectomy is associated with similar recurrence-free and overall survival when compared with lobectomy in the setting of patients with clinical T1cN0M0 non-small cell lung cancer (NSCLC; >2-3 cm), as defined by the American Joint Committee on Cancer 8th edition staging system.

Methods. We performed a single-institution retrospective study identifying patients undergoing segmentectomy (90) versus lobectomy (279) for T1c NSCLC from January 1, 2003, to December 31, 2016. Univariate, multivariable, and propensity score-weighted analyses were performed to analyze the following endpoints: freedom from recurrence, overall survival, and time to recurrence.

Results. Patients undergoing segmentectomy were older than patients undergoing lobectomy (71.5 vs 68.8, respectively, P = .02). There were no differences in incidence of major complications (12.4% vs 11.7%, P=.85), hospital length of stay (6.2 vs 7 days, P=.19), and mortality at 30 (1.1% vs 1.7%, P = 1) and 90 days (2.2% vs 2.3%, P = 1). In addition, there were no statistical differences in locoregional (12.2% vs 8.6%, P = .408), distant (11.1% vs 13.9%, P = .716), or overall recurrence (23.3% vs 22.5%, P = 1), as well as 5-year freedom from recurrence (68.6% vs 75.8%, P = .5) or 5-year survival (57.8% vs 61.0%, P = .9). Propensity score-matched analysis found no differences in overall survival (hazard ratio [HR], 1.034; P = .764), recurrence-free survival (HR, 1.168; P = .1391), or time to recurrence (HR, 1.053; P = .7462).

Conclusions. In the setting of clinical T1cN0M0 NSCLC, anatomic segmentectomy was not associated with significant differences in recurrence-free or overall survival at 5 years. Further prospective randomized trials are needed to corroborate the expansion of the role of anatomic segmentectomy to all American Joint Committee on Cancer 8th Edition Stage 1A NSCLC.

Comparison of Video-Assisted Thoracoscopic Surgery with Thoracotomy in Bronchial Sleeve Lobectomy for Centrally Located Non-Small Cell Lung Cancer

Xie D, Deng J, Gonzalez-Rivas D, Zhu Y, Jiang L, Jiang G, Chen C

Objectives. The aim of this study was to investigate the adequacy of bronchial sleeve lobectomy by video-assisted thoracoscopic surgery in perioperative outcomes and its oncological efficacy by comparing with thoracotomy in a balanced population.

Methods. A total of 363 patients who received bronchial sleeve lobectomy for non-small cell lung cancer from January 2013 to December 2017 were included and placed in the thoracotomy (n = 251) and video-assisted thoracoscopic surgery (n = 112) groups. Statistical analyses were performed to compare patients' demographics, perioperative outcomes, and survival between the 2 groups.

Results. A total of 116 thoracotomy cases were matched with 72 video-assisted thoracoscopic surgery cases by propensity score. Compared with thoracotomy, patients in the video-assisted thoracoscopic surgery group after matching had less intraoperative blood loss (P<.01) and length of postoperative hospital stay (P < .01), duration of chest tube drainage (P<.01), and intensive care unit stay (P = .03) despite comparable operative time, complication rate, and 30- to 90-day mortality rate. The overall survival and recurrence-free survival were similar in patients who received sleeve lobectomy by thoracotomy and video-assisted thoracoscopic surgery (log-rank, P = .24 and .20, respectively) at 3 years. Although advanced TNM stage was independently associated with worse overall survival and recurrence-free survival in multivariable analysis, older age was only predictive for worse overall survival (hazard ratio, 1.04; 95% confidence interval, 1.01-1.07; P = .02). Body mass index was also found be a predictive factor (overall survival: hazard ratio, 0.93; 95% confidence interval, 0.86-0.99, P = .03; recurrence-free survival: hazard ratio, 0.93; 95% confidence interval, 0.87-0.99, P = .02).

Conclusions. With appropriate patient selection and continued experience, video-assisted thoracoscopic surgery appears to be safe in the short-term perioperative period and does not appear to comprise oncologic outcomes in performing sleeve lobectomy.

Gefitinib as Neoadjuvant Therapy for Resectable Stage II-IIIA Non-Small Cell Lung Cancer: A Phase II Study

Zhang Y, Fu F, Hu H, Wang S, Li Y, Hu H, Chen H

Introduction. Currently, limited data on tyrosine kinase inhibitors as neoadjuvant therapy exist. This prospective study aimed to investigate the efficacy and safety of preoperative gefitinib in patients with stage II-IIIA operable non-small cell lung cancer (NSCLC).

Methods. This was a single-arm, phase II trial performed in the Shanghai Cancer Center. Between August 2013 and October 2015, patients with operable stage II-IIIA NSCLC with epidermal growth factor receptor (EGFR) exon 19 deletion or exon 21 L858R mutation were enrolled. Patients were treated with preoperative gefitinib (250 mg once daily for 42 days), followed by surgical resection. The primary endpoint was objective response rate (ORR); secondary endpoints were the rate of major pathologic response (MPR), disease-free survival (DFS), overall survival, and adverse events (AEs). ORR was defined as the proportion of patients achieving complete response or partial response radiologically. MPR was defined as no more than 10% viable tumor.

Results. Of the 35 eligible patients, 33 were considered as intention-to-treat population. ORR, the primary endpoint, was 54.5% (95% confidence interval [CI], 37.7-70.7), and the rate of MPR was 24.2% (95% CI, 11.9-40.4). Median DFS was 33.5 months (95% CI, 19.7-47.3); median overall survival was not reached. Skin toxicity (24/35,68.6%) and gastrointestinal symptoms (17/35,48.6%) were the most common AEs; no patients reported grade 3 or 4 AEs. After surgery, 4 patients experienced chylothorax (4/33,12.1%). Patients with MPR had a prolonged survival compared with those without (DFS, P = .019).

Conclusions. Neoadjuvant therapy with gefitinib in patients with stage II-IIIA NSCLC is safe and may be a viable treatment for patients whose tumors have EGFR mutations. Patients with MPR were associated with improved survival.

Retrievable Covered Metallic Segmented Y Airway Stent for Gastrorespiratory Fistula of Carina or Main Bronchi

Huang W, Shan Q, Wu Z, Li H, Zhou M, Ding X, Wang Z

Objective. To evaluate the feasibility of new retrievable covered metallic segmented Y airway stents modified with 3-dimensional (3D) printing for gastrorespiratory fistula involving carina or main bronchi.

Methods. We designed a new retrievable covered metallic segmented Y airway stent to fit the anatomical characteristics of the carina region in individual patients. All stents were individually customized based on a 3D-printed mold. Six patients with gastrorespiratory fistula and aspiration pneumonia after esophagectomy underwent the stent implantation. The stents were retrieved when the fistula was cured or stent-related complications occurred.

Results. Seven Y stents were successfully implanted and removed in 6 patients. All stents expanded well, and the fistulas were completely sealed. Aspiration pneumonia was controlled in 6 patients. The median Karnofsky Performance Status scores significantly improved after stenting compared with those before stent implantation (P = .024). Sputum retention was the most common complication after stenting and was treated with aspiration under bronchoscopy (33.33%). Excessive granulation tissue proliferation was found in 1 patient (16.7%) and was treated with cryotherapy. The indwelling time of the stent was 64 days (interquartile range, 52-69 days). After stent removal, bronchoscopy, gastroscopy, and computed tomography of the chest showed cured fistulas in all patients, and no stents showed fractures.

Conclusions. Retrievable covered metallic segmented Y airway stents modified with 3D printing appear to be feasible for the treatment of gastrorespiratory fistula involving carina or main bronchi.