

relationships. CONCLUSIONS: Low triiodothyronine is associated with left ventricular dysfunction and left ventricular hypertrophy in ESRD patients. These associations appear largely mediated by inflammation. Low fT_3 may be an intermediate mechanism implicated in the adverse cardiac effects of inflammation in patients with ESRD.

三碘甲状腺氨酸低水平与终末期肾脏疾病患者的心肌病

目的和方法 : 血浆游离三碘甲状腺氨酸 (fT_3) 低水平与终末期肾脏疾病 (ESRD) 患者的炎症和心血管损害相关。作者在 234 例透析患者中观察 fT_3 、左心室收缩功能以及左心室质量之间的关系, 同时利用包括直接 (白细胞介素-6 及 C-反应蛋白) 和逆向 (血清白蛋白) 急性期炎症标记物的统计学分析来模拟 fT_3 与心肌病之间的关联性。结果 : 与健康受试者以及肾功能正常的临床甲状腺功能正常患者相比, 透析患者的血浆 fT_3 浓度显著降低 ($P < 0.001$)。与 fT_3 浓度处于其他四分位区间的患者相比, 浓度处于第 1 个四分位区间的患者左心室收缩功能降低 ($P \leq 0.003$), 左心室质量增加 ($P < 0.001$)。在对 Framingham 危险因素、抗高血压治疗 ($P \leq 0.01$) 以及对 ESRD 特有危险因素 ($P = 0.03$) 校正后的多因素回归分析中, 该相关性仍呈现显著性。但对白细胞介素-6 或白蛋白校正后, 该相关性不再存在。结论 : ESRD 患者的三碘甲状腺氨酸低水平与其左心室功能不全和左心室肥大相关。此相关性很大程度上由炎症介导。 fT_3 低水平可能是炎症对 ESRD 患者负性心脏效应的一个介导机制。

0164. Late incompetence of the left atrioventricular valve after repair of atrioventricular septal defects: The morphologic perspective

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Objective: The mortality following repair of atrioventricular septal defects has fallen dramatically in the last 4 decades, but reoperation for late regurgitation across the left atrioventricular valve has remained disconcertingly stagnant. Seeking potential structural causes, we compared the morphology of the surgically created septal leaflet of the left valve following repair of atrioventricular septal defects to the aortic leaflet of the normal mitral valve. **Methods:** We compared the mitral valves of 92 normal hearts to the left ventricular components of the bridging leaflets of hearts

with atrioventricular septal defect with common atrioventricular junction, determining the shape of the leaflets and the arrangement of the subvalvar apparatus. **Results:** The aortic leaflet of the mitral valve is triangular compared with its rectangular septal counterpart after repair of atrioventricular septal defect. The cordal arrangement in the mitral valve is well organized, compared with the deficient cordal arrangement of the abnormal valve. A greater proportion of cords in the mitral valve divide to 3 generations (55.5% compared with 8.7%; $P < .001$), and a higher percentage of cords remain undivided in atrioventricular septal defects (60.8% compared with 25%; $P < .001$). **Conclusions:** Not only is the annular component in the left atrioventricular valve abnormal, but the subvalvar apparatus is characterized by deficiency and disarray. Furthermore, the axis of cordal insertion may potentiate to separation over the long term of the leaflets joined surgically. Valvar repair in this setting will never restore the arrangement of the normal mitral valve.

房室间隔缺损修复术后左房室瓣迟发关闭不全的形态学研究

目的 : 近 40 年来房室间隔缺损修复术后的死亡率显著下降, 但因左房室瓣迟发反流而再次手术的状况仍未改善。为寻找潜在的结构原因, 作者对房室间隔缺损修复术后手术重塑的左房室瓣隔叶与正常二尖瓣的主动脉叶进行形态学对比研究。**方法** : 对 92 个正常心脏的二尖瓣与具有正常房室连接的房室间隔缺损的桥接小叶左室部分进行比较, 确定瓣叶形态及瓣叶下结构的分布。结果 : 二尖瓣的主动脉叶与其房室间隔缺损修复术后直角隔叶相比呈三角形。与异常瓣膜的有缺陷腱索分布相比, 二尖瓣的腱索分布规则。大部分二尖瓣的腱索可以分为 3 级 (55.5% vs 8.7%; $P < 0.001$), 但在房室间隔缺损瓣叶中绝大部分腱索保持未分离状态 (60.8% vs 25%; $P < 0.001$)。结论 : 不但左房室瓣瓣环部分存在异常, 瓣叶下结构也呈现缺损和紊乱的特点。而且手术重塑瓣叶经长时间后, 插入腱索的轴线可能分离。在此情况下, 瓣膜修复将无法恢复二尖瓣的正常排列结构。

0165. Extended use of extracorporeal membrane oxygenation after lung transplantation

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Objectives: Extracorporeal membrane oxygenation(ECMO) for severe graft failure after lung transplantation is accepted immediately postoperatively; extending its use is controversial. We evaluated our post-lung transplant ECMO experience, which included extended indication, to(1) determine its prevalence, risk factors, indications, and timing, (2) compare complications and outcomes of these patients with those not requiring it, and(3) identify risk factors, including indications, for mortality. **Methods:** From February 1990 to October 2005, 474 patients underwent lung transplantation; postoperative ECMO support was instituted for severe graft failure 23 times in 22 patients(4.0%) . Indications for ECMO and its timing were obtained by reviewing medical records and survival by systematic follow-up. **Results:** No factor evaluated predicted severe graft failure leading to ECMO. The most common indication for ECMO was early graft failure(13 patients); however, it was also used for pneumonia or sepsis(6) and acute rejection(4). ECMO was initiated at a median arterial oxygen tension/inspired oxygen fraction of 59 at a median of 2 days postoperatively and was maintained for a median of 4 days. The most common complications were renal failure(57%) and bleeding(43%) . ECMO was effective in salvaging patients with rejection and early graft failure(survival at 1, 3, 6, and 12 months: 62%, 54%, 49%, and 41%), but ineffective for pneumonia or sepsis(survival at these intervals: 9%, 4%, 4%, and 3%) . **Conclusions:** ECMO can be extended beyond early severe graft failure to acute rejection and can be considered after the immediate postoperative period. Survival after ECMO in patients with pneumonia or sepsis is poor.

肺移植术后体外膜肺氧合的扩展应用

目的 现已接受在肺移植术后严重移植失败即刻应用体外膜肺氧合(ECMO),但其能否扩展应用仍存在争议。本研究对肺移植术后应用ECMO的经验(包括扩展应用指征在内)进行评估,其目的是:①确定其发生率、危险因素、适应证及使用时间;②比较需应用和无需应用ECMO患者的并发症和转归;③确定死亡危险因素和指征。**方法** :1990年2月至2005年10月,共有474例患者接受肺移植手术。对22例(4.0%)患者因严重移植失败行术后ECMO支持共计23次。通过回顾医疗记录获取ECMO适应证和使用时间,利用系统随访获取患者生存资料。**结果** :术后严重移植失败而应用ECMO缺

乏预测因素。ECMO的最常见适应证为早期移植失败(13例),其也用于治疗肺炎或脓毒症(6例)以及急性排斥反应(4例)。ECMO在术后2d(中位数)动脉氧分压/吸入氧浓度中位比值为59时开始使用,持续4d(中位数)。最常见的并发症为肾衰竭(57%)和出血(43%)。ECMO对于抢救排斥反应和早期移植失败患者(1个月、3个月、6个月和12个月的生存率分别为62%、54%、49%和41%)有效,但对肺炎或脓毒症(上述各时间段的生存率分别为9%、4%、4%和3%)无效。**结论** :ECMO适应证可从早期严重移植失败扩展到排斥反应,并可在手术后极早期考虑应用。肺炎或脓症患者应用ECMO后的生存率较低。

0166. Endoscopic robotic mitral valve surgery

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Objective: To determine the safety and efficacy of endoscopic mitral valve surgery using robotic instruments through the lateral right chest. **Methods:** We conducted a retrospective review of 127 patients taken to the operating room for endoscopic robotic mitral surgery from December 2002 through November 2005. Mean age was 54 ± 13 years and 58% were male. Mitral regurgitation was 4+ in 121 patients, 3+ in 4 patients, and 2+ in 2 patients. Nineteen (15%) patients had a left ventricular ejection fraction of 0.50 or less. Surgical approach was through 4 right chest ports with femoral perfusion and endoaortic balloon occlusion. Mean follow-up was 13.7 ± 8.9 months and was 100% complete. Echocardiographic follow-up was available on 98 patients with a mean of 8.4 ± 8.1 months. **Results:** The mitral procedure was completed endoscopically in 121(95%) patients. Mitral valve repair was performed in 114 patients and mitral valve replacement in 7 patients. Two patients required reoperation on the mitral valve. There was 1(0.8%) hospital death and 1 late death. Echocardiographic follow-up in 98 survivors of endoscopic mitral repair revealed 0-1+ regurgitation in 95 (96.9%) and 2+ in 3(3.1%) patients. **Conclusions:** Totally endoscopic mitral surgery can be performed safely with robotic instrumentation. A right lateral configuration of the robotic system allows excellent visualization of the valve with minimal distortion and permits two surgical personnel