ClinicalKey – 帮助解决临床问题案例介绍

如何快速回答具有挑战性的心脏病问题？

注:此案例成型于2012年，因此仍是ClinicalKey老版界面，与新 版ClinicalKey (2014年9月升级）有所不同，供大家参考。

临床案例

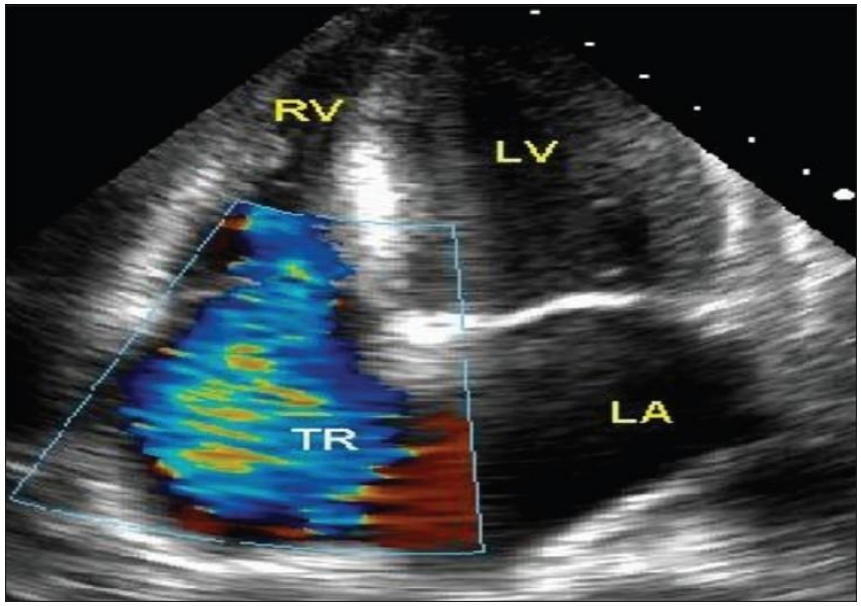
- 患者女，72岁，疲劳、踝关节水肿、腹胀和消化不良进行性加重6个月
- 疲劳始发于3年前，当时的超声心电图显示：
  - 双室大小功能正常
  - 轻度二尖瓣反流
  - 轻到中度三尖瓣反流
  - 轻度心房增大
  - 多普勒彩超结果与左心室舒张受损、充盈压增高一致
- 既往治疗：噻嗪类利尿剂
- 无其他重要既往史

- **体格检查**
  - 血压134/70, 心率89，不规则
  - 肺野清晰
  - 颈静脉压力12cm, V波显著
  - 心尖搏动不能触及
  - 沿胸骨左缘右心室杂音, 第一、二心音正常
  - 胸骨左下缘听诊，第四心音& 全收缩期心脏杂音2/6级，吸气时增强
  - 肝脏边缘可触及，质软
  - 腹胀
  - 下肢2度水肿

临床案例

- 初步实验室检查
  - 肝功轻度增高， 脑尿钠肽BNP 279, (凝血指标)INR 1.4, 肌酐1.1
- 心电图
  - 房颤，平均心率86，无其他异常
- 心脏超声
  - 左心室大小功能正常
  - 右心室轻度增大，功能正常
  - 左右心房明显增大
  - 二尖瓣轻度反流，三尖瓣重度反流，瓣膜解剖正常
- 舒张功能
  - 由于房颤无法确定
  - 估计PASP 52 mmHg，LVOT VTI低

三尖瓣反流



Source: Indian J Endocrinol Metab. 2011 Apr-Jun; 15(2): 137–139, Mohammad Hayat Bhat et al.
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3125005/

治疗方案和问题？

- 利尿剂治疗
  - 水肿腹胀症状减轻，但是仍有疲劳感，特别是劳累时，食欲差
- 受体阻滞剂治疗
  - 由于疲劳感加重，停止
  - 由于心房增大，未用心脏电复律治疗

- **需要解决的问题:**
  - **显著三尖瓣反流的药物治疗方案？**
  - **显著三尖瓣反流的手术指征？是否由于三尖瓣环和右心室扩张造成？**
  - **若要手术 – 如何修补？瓣环成形术、生物瓣膜还是机械瓣膜？**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DISEASE Congenital insufficiency of tricuspid valve
DISEASE Rheumatic tricuspid valve regurgitation
DISEASE Rheumatic tricuspid stenosis and insufficiency
DISEASE Transient tricuspid regurgitation of newborn
DISEASE Tricuspid incompetence, non-rheumatic
PROCEDURE Echocardiography
PROCEDURE Electrocardiography
PROCEDURE Transesophageal Echocardiography
PROCEDURE Radiography of chest
PROCEDURE History and physical examination
PROCEDURE Annuloplasty of Tricuspid Valve
PROCEDURE Repair of Tricuspid Valve with Prosthesis
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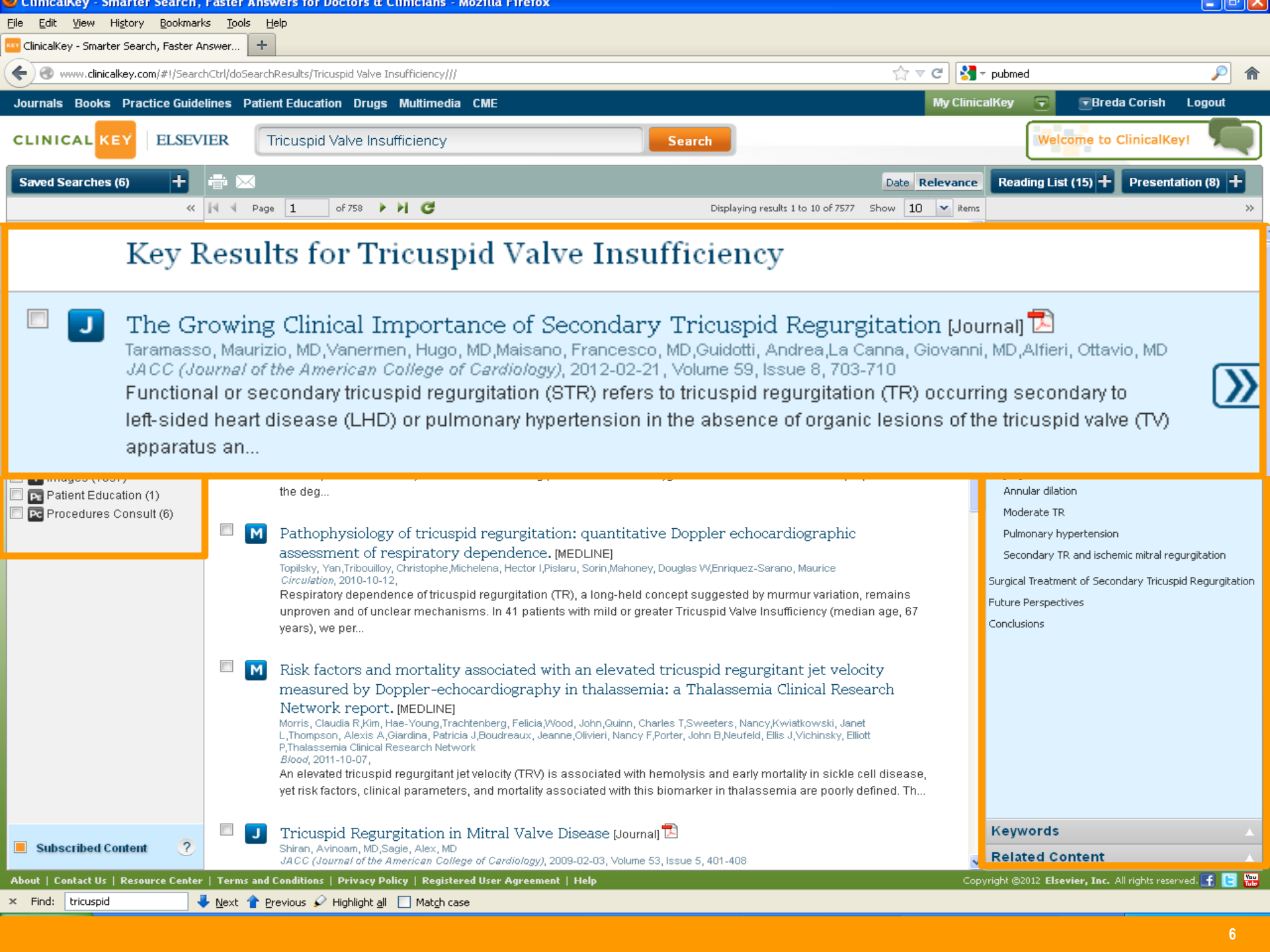
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Key Results for Tricuspid Valve Insufficiency
The Growing Clinical Importance of Secondary Tricuspid Regurgitation [Journal]
Taramasso, Maurizio, MD,Vanermen, Hugo, MD,Maisano, Francesco, MD,Guidotti, Andrea,La Canna, Giovanni, MD,Alfieri, Ottavio, MD
JACC (Journal of the American College of Cardiology), 2012-02-21, Volume 59, Issue 8, 703-710
Functional or secondary tricuspid regurgitation (STR) refers to tricuspid regurgitation (TR) occurring secondary to left-sided heart disease (LHD) or pulmonary hypertension in the absence of organic lesions of the tricuspid valve (TV) apparatus an...
Patient Education (1)
Procedures Consult (6)
the deg...
Pathophysiology of tricuspid regurgitation: quantitative Doppler echocardiographic assessment of respiratory dependence. [MEDLINE]
Topilsky, Yan,Tribouilloy, Christophe,Michelena, Hector I,Pislaru, Sorin,Mahoney, Douglas W,Enriquez-Sarano, Maurice
Circulation, 2010-10-12,
Respiratory dependence of tricuspid regurgitation (TR), a long-held concept suggested by murmur variation, remains unproven and of unclear mechanisms. In 41 patients with mild or greater Tricuspid Valve Insufficiency (median age, 67 years), we per...
Risk factors and mortality associated with an elevated tricuspid regurgitant jet velocity measured by Doppler-echocardiography in thalassemia: a Thalassemia Clinical Research Network report. [MEDLINE]
Morris, Claudia R,Kim, Hae-Young,Trachtenberg, Felicia,Wood, John,Quinn, Charles T,Sweeters, Nancy,Kwiatkowski, Janet L,Thompson, Alexis A,Giardina, Patricia J,Boudreaux, Jeanne,Olivieri, Nancy F,Porter, John B,Neufeld, Ellis J,Vichinsky, Elliott P,Thalassemia Clinical Research Network
Blood, 2011-10-07,
An elevated tricuspid regurgitant jet velocity (TRV) is associated with hemolysis and early mortality in sickle cell disease, yet risk factors, clinical parameters, and mortality associated with this biomarker in thalassemia are poorly defined. Th...
Tricuspid Regurgitation in Mitral Valve Disease [Journal]
Shiran, Avinoam, MD,Sagie, Alex, MD
JACC (Journal of the American College of Cardiology), 2009-02-03, Volume 53, Issue 5, 401-408
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Secondary TR and ischemic mitral regurgitation
Surgical Treatment of Secondary Tricuspid Regurgitation
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The Growing Clinical Importance of Secondary Tricuspid Regurgitation

Maurizio Taramasso, Hugo Vanermen, Francesco Maisano, Andrea Guidotti, Giovanni La Canna, and Ottavio Alfieri

Tools

Author Information

Functional or secondary tricuspid regurgitation (STR) is the most frequent etiology of tricuspid valve pathology in Western countries. Surgical tricuspid repair has been avoided for years, because of the misconception that tricuspid regurgitation should disappear once the primary left-sided problem is treated; this results in a large number of untreated patients with STR.

tethering

Pulmonary hypertension

Natural History and Prognostic

in the physiopathology and treatment of STR. The purpose of this review is to explore the anatomical basis, pathophysiology, therapeutic approach, and future perspectives with regard to the management of STR.

Scientific Institute, Milan, Italy

Cardiothoracic Surgery, Onze Lieve Vrouwziekenhuis, Aalst, Belgium

Functional or secondary tricuspid regurgitation (STR) refers to tricuspid regurgitation (TR) occurring secondary to left-sided heart disease (LHD) or pulmonary hypertension in the absence of organic lesions of the tricuspid valve (TV) apparatus and is the most frequent etiology of TV disease in Western countries (1). The "functional" label used regarding TR secondary to pulmonary hypertension or LHD is possibly a misnomer, in that because of the absence of any organic pathology, it could be incorrectly interpreted as a benign condition that would resolve itself after the correction of the primary disorder.

atomical abnormalities of the TV apparatus, such as annular

Pulmonary hypertension

R. The present report is aimed at both medical nts with TR are usually different; generally, it is the cardiac surgeon who makes the decision concerning whether or not to perform TV repair during left-heart surgery, while medical cardiologists are reluctant to recommend reoperative tricuspid surgery after surgical correction of the LHD that initially provoked TR, because of the increased morbidity and mortality associated with reoperative open-heart operations (12). This review should foster

Conclusions

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Pulmonary hypertension

In cases of TV dysfunction, the grade of pulmonary hypertension has been shown to be associated with the severity of TR (20).

Pulmonary hypertension may persist after mitral surgery in about 25% of cases; progressive tricuspid dysfunction may also occur in

Pulmonary hypertension

In cases of TV dysfunction, the grade of pulmonary hypertension has been shown to be associated with the severity of TR (20).

Secondary TR and ischemic mitral regurgitation

Concomitant STR is a frequent finding in patients with ischemic cardiomyopathy and functional mitral regurgitation (23). When left untreated, STR progression after surgical revascularization and mitral surgery in ischemic cardiomyopathy negatively affects prognosis (48).

general recommendations as to when, or when not, to correct STR.

as left-heart surgery (36 37). If severe TV tethering is present

e use of adjunctive surgical techniques to tricuspid annuloplasty or TV

STR should be surgically corrected in cases of concomitant LHD

preoperative echocardiography or >70 mm on intraoperative inspection)

ce of LHD requiring surgery, conservative management and clinical follow-up should be carried out (17).

Surgical Treatment of Secondary Tricuspid Regurgitation

TV annuloplasty is the basis of current surgical therapy for STR and aims to correct annular dilation and restore annular geometry, resulting in improved leaflet coaptation.

Two principal surgical methods are used to treat STR: suture annuloplasty techniques and the ring annuloplasty techniques.

With suture annuloplasty methods, annular size is reduced by using a continuous suture to purse string the annulus. Most suture annuloplasty techniques are modified versions of Kay bicuspidization (Figs. 4 A and 4B) (49) or De Vega annuloplasty (Fig. 5 A), which consists of the plication of both the posterior and anterior annulus (50).

A

Tools

Author Information

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Natural History and Prognostic Implications

Severe TR is an independent predictor of long-term mortality (65% 1-year survival rate in patients with severe TR compared with 90% of patients without TR) (25). Several studies reported a higher long-term mortality rate, lower quality of life, and reduced exercise capacity in patients who developed severe TR after MV surgery (26 27).

Natural History and Prognostic Implications

Severe TR is an independent predictor of long-term mortality (65% 1-year survival rate in patients with severe TR compared with 90% of patients without TR) (25).

Late TR onset after isolated mitral surgery is associated with decreased exercise tolerance and poor quality of life (31). Many of these patients undergo reoperative TV surgery, with an early mortality rate of 10% to 25% (13).

Tager et al. (32) reported that concomitant TV repair at the time of MV surgery results in TR resolution in about 85% of patients, while several other groups observed a higher incidence of post-operative TR in patients in whom TR was not treated than in patients who ...uloplasty during mitral surgery results in a lower incidence

Conservative Management

...ebated whether a lower incidence of late TR after surgery

...afterload. RV overload may benefit from progressive use of diuretics and angiotensin-converting enzyme inhibitors. However, an excessive reduction in central venous pressure may result in worsening of TR severity (2).

The use of angiotensin-converting enzyme inhibitors is supported by evidence that chronic RV pressure overload activates the renin-angiotensin-aldosterone system, which may contribute to fluid retention and ventricular remodeling (33); B-type natriuretic peptide is usually increased in cases of RV pressure or volume overload (34).

Although a causal relationship between TR severity and more severe renal failure has not been demonstrated, an association between TR grade and lower estimated glomerular filtration rate, higher blood urea nitrogen, and higher blood urea nitrogen/creatinine ratio has been described (35).

Conservative Management

Conservative management of STR includes optimization of RV preload and afterload. RV overload may benefit from progressive use of diuretics and angiotensin-converting enzyme inhibitors. However, an excessive reduction in central venous pressure may result in worsening of TR severity (2).

Although a causal relationship between TR severity and more severe renal failure has not been demonstrated, an association between TR grade and lower estimated glomerular filtration rate, higher blood urea nitrogen, and higher blood urea nitrogen/creatinine ratio has been described (35).

Surgical Management of Secondary Tricuspid Regurgitation

The principles of therapy for STR include elimination of increased afterload to the right ventricle (by correction of LHD and optimization of left ventricular [LV] function) and correction of TA dilation and dysfunction, usually by TV annuloplasty (17).

Current European and U.S. guidelines regarding TV surgery are reported in Table 1 (36 37).

Table 1
Guidelines for Tricuspid Valve Repair for Secondary TR

European Society of Cardiology (2007)
Class I: severe TR in a patient undergoing left-sided valve surgery (C)
Class IIa moderate TR with dilated annulus (40 mm) in a patient undergoing left-sided valve surgery (C)
Class IIa: symptomatic severe TR late after left-sided valve surgery in the absence of left-sided myocardial, valve, or right ventricular dysfunction and without severe pulmonary hypertension (C)
American College of Cardiology/American Heart Association (2008)
Class I: severe TR in patients undergoing MV surgery (B)
Class IIb: "less than severe TR" in patients undergoing MV surgery, with pulmonary artery hypertension or tricuspid annular dilation (C)

Annular dilation

TA dilation is invariably associated with STR (3). Some studies have suggested that concomitant tricuspid annuloplasty should be

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Image Description Citation

Tricuspid Annular Dilation (A) No
leading to tricuspid regurgitation

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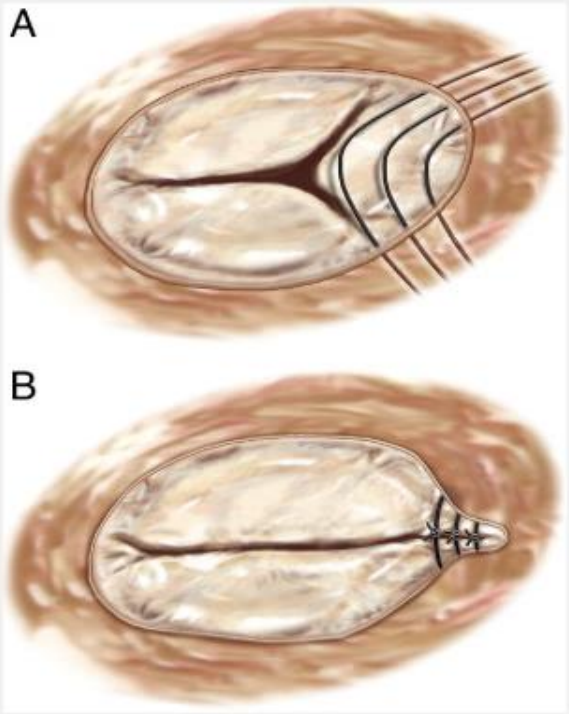

Kay Repair Technique (A) Tricuspid valve bicuspidization is accomplished by plicating the annulus along the posterior leaflet. (B) The sutures are tied, obliterating the posterior leaflet, creating a bicuspid valve.

Figure illustration by Craig Skaggs.

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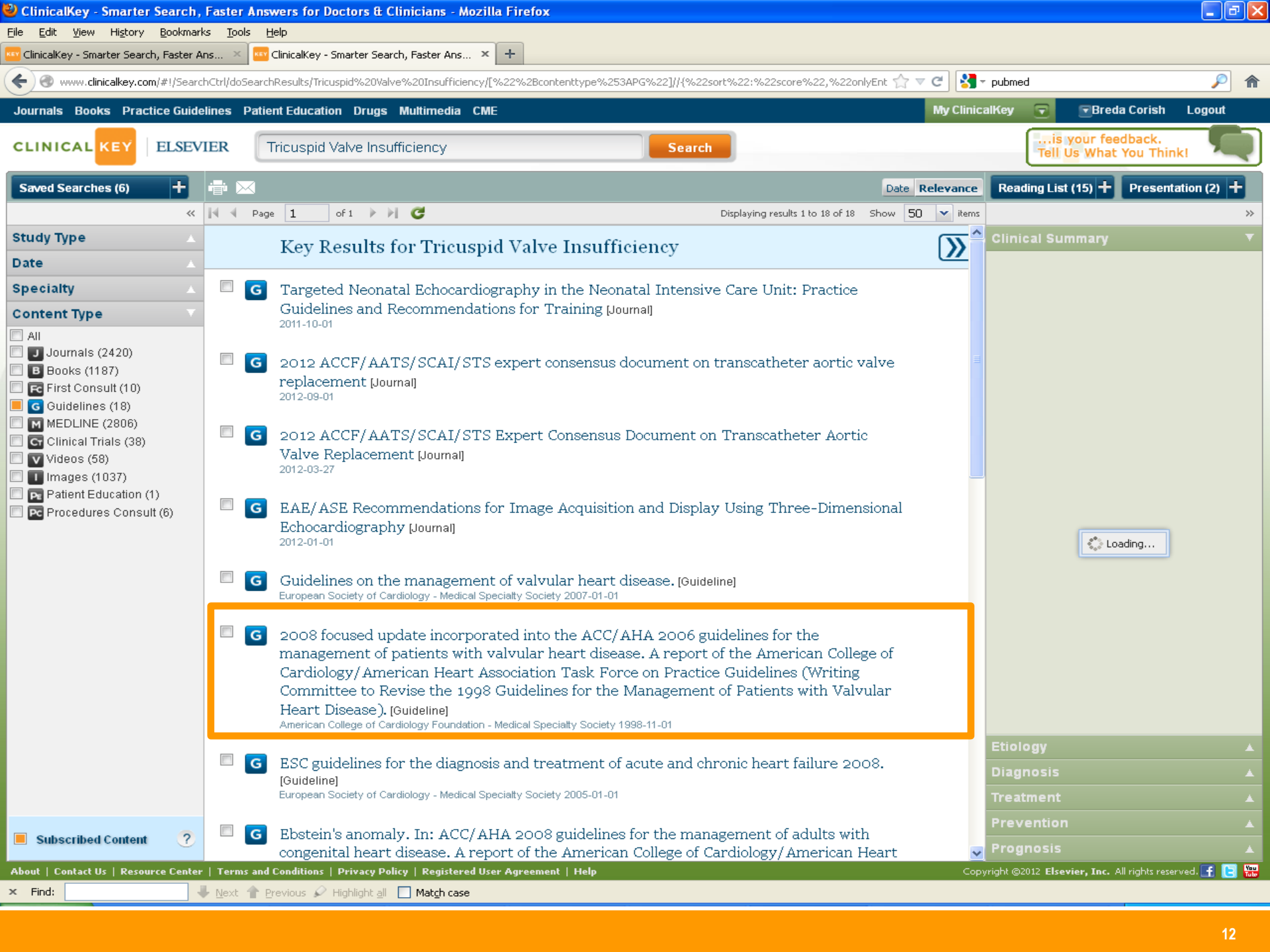
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2012 ACCF/AATS/SCAI/STS expert consensus document on transcatheter aortic valve replacement [Journal]
2012-09-01
2012 ACCF/AATS/SCAI/STS Expert Consensus Document on Transcatheter Aortic Valve Replacement [Journal]
2012-03-27
EAE/ASE Recommendations for Image Acquisition and Display Using Three-Dimensional Echocardiography [Journal]
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2008 focused update incorporated into the ACC/AHA 2006 guidelines for the management of patients with valvular heart disease. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 1998 Guidelines for the Management of Patients with Valvular Heart Disease). [Guideline]
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ESC guidelines for the diagnosis and treatment of acute and chronic heart failure 2008. [Guideline]
European Society of Cardiology - Medical Specialty Society 2005-01-01
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Bonow RO, Carabello BA, Chatterjee K, de Leon AC Jr, Faxon DP, Freed MD, Gaasch WH, Lytle BW, Nishimura RA, O'Gara PT, O'Rourke RA, Otto CM, Shah PM, Shanewise JS, American College of Cardiology/American Heart Association Task Force on Practice Guidelines. 2008 focused update incorporated into the ACC/AHA 2006 guidelines for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines [Trunc]. J Am Coll Cardiol 2008 Sep 23;52(13):e1-142. [1067 references] PubMed

- Aortic stenosis
- Aortic regurgitation
- Bicuspid aortic valves with dilated ascending aorta
- Mitral stenosis
- Mitral valve prolapse
- Mitral regurgitation
- Multiple valve disease
- Tricuspid valve disease
- Prosthetic heart valve complications
- Coronary artery disease
- Pulmonic stenosis
- Pulmonic regurgitation
- Pulmonic valve lesions

Guideline Category
Evaluation
Management

1. MV surgery is not indicated for asymptomatic patients with MR and preserved LV function (ejection fraction greater than 0.60 and end-systolic dimension less than 40 mm) in whom significant doubt about the feasibility of repair exists. **(Level of Evidence: C)**
2. Isolated MV surgery is not indicated for patients with mild or moderate MR. **(Level of Evidence: C)**

Tricuspid Valve Disease

Management

Class I

1. Tricuspid valve repair is beneficial for severe tricuspid regurgitation (TR) in patients with MV disease requiring MV surgery. **(Level of Evidence: B)**

Class IIa

1. Tricuspid valve replacement or annuloplasty is reasonable for severe primary TR when symptomatic. **(Level of Evidence: C)**
2. Tricuspid valve replacement is reasonable for severe TR secondary to diseased/abnormal tricuspid valve leaflets not amenable to annuloplasty or repair. **(Level of Evidence: C)**

Class IIb

1. Tricuspid annuloplasty may be considered for less than severe TR in patients undergoing MV surgery when there is pulmonary hypertension or tricuspid annular dilatation. **(Level of Evidence: C)**

Class III

1. Tricuspid valve replacement or annuloplasty is not indicated in asymptomatic patients with TR whose pulmonary artery systolic pressure is less than 60 mm Hg in the presence of a normal MV. **(Level of Evidence: C)**
2. Tricuspid valve replacement or annuloplasty is not indicated in patients with mild primary TR. **(Level of Evidence: C)**

Evaluation and Management of Infective Endocarditis

Class I

1. Patients at risk for infective endocarditis who have unexplained fever for more than 48 h should have at least 2 sets of blood cultures obtained from different sites. **(Level of Evidence: B)**

Class III

1. Patients with known valve disease or a valve prosthesis should not receive antibiotics before blood cultures are

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Eleid, Mackram F., MD,Blauwet, Lori A., MD,Cha, Yong-Mei, MD,Connolly, Heidi M., MD,Brady, Peter A., MD,Dearani, Joseph A., MD,Espinosa, Raúl E., MD
JACC (Journal of the American College of Cardiology), 2012-02-28, Volume 59, Issue 9, 813-818
Tricuspid valve replacement (TVR) with a bioprosthetic tricuspid valve (BTV) is an established treatment for severe tricuspid valve (TV) stenosis and tricuspid regurgitation (TR) related to a variety of disease states. Atrioventricular block and s...

Carcinoid syndrome [First Consult]
Stephen Sisson, MD,Jenna Goldberg, MD,Edwin Choy, MD
Revised: 13 Sep 2007
Last Updated:
Symptom complex characterized by paroxysmal vasomotor disturbances, diarrhea, bronchospasm, and cutaneous flushing. Symptoms caused by the action of amines and peptides (serotonin, bradykinin, histamine) produced by tumors arising from neuroendocr...

Determinants of surgical outcome in patients with isolated tricuspid regurgitation.
[MEDLINE]
Kim, Yong-Jin,Kwon, Dong-A,Kim, Hyung-Kwan,Park, Jin-Shik,Hahn, Seokyung,Kim, Kyung-Hwan,Kim, Ki-Bong,Sohn, Dae-Won,Ahn, Hyuk,Oh, Byung-Hee,Park, Young-Bae
Circulation, 2009-10-28,
We sought to identify preoperative predictors of clinical outcomes after surgery in patients with severe tricuspid regurgitation. We prospectively enrolled 61 consecutive patients (54 women, aged 57+/-9 years) with isolated severe tricuspid regurg...

Valvular Heart Disease [Book]
Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine - Ninth Edition, Chapter 66, 1468-1539, © 2012
Major types of aortic valve stenosis. A, Normal aortic valve. B, Congenital bicuspid aortic stenosis. A false raphe is present at 6 o'clock. C, Rheumatic aortic stenosis. The commissures are fused with a fixed central orifice. D, Calcific degenera...

Combining tricuspid valve repair with double lung transplantation in patients with severe pulmonary hypertension, tricuspid regurgitation, and right ventricular dysfunction.
[MEDLINE]
Shigemura, Norihisa,Sareyyupoglu, Basar,Bhama, Jay,Bonde, Pramod,Thacker, Jnanesh,Bermudez, Christian,Gries, Cynthia,Crespo, Maria,Johnson, Bruce,Pilewski, Joseph,Toyoda, Yoshiya
Chest, 2011-10-02,
Concomitant tricuspid valve repair (TVR) and double lung transplantation (DLTx) has been a surgical option at our institution since 2004 in an attempt to improve the outcome of DLTx for end-stage pulmonary hypertension, severe tricuspid regurgitat...

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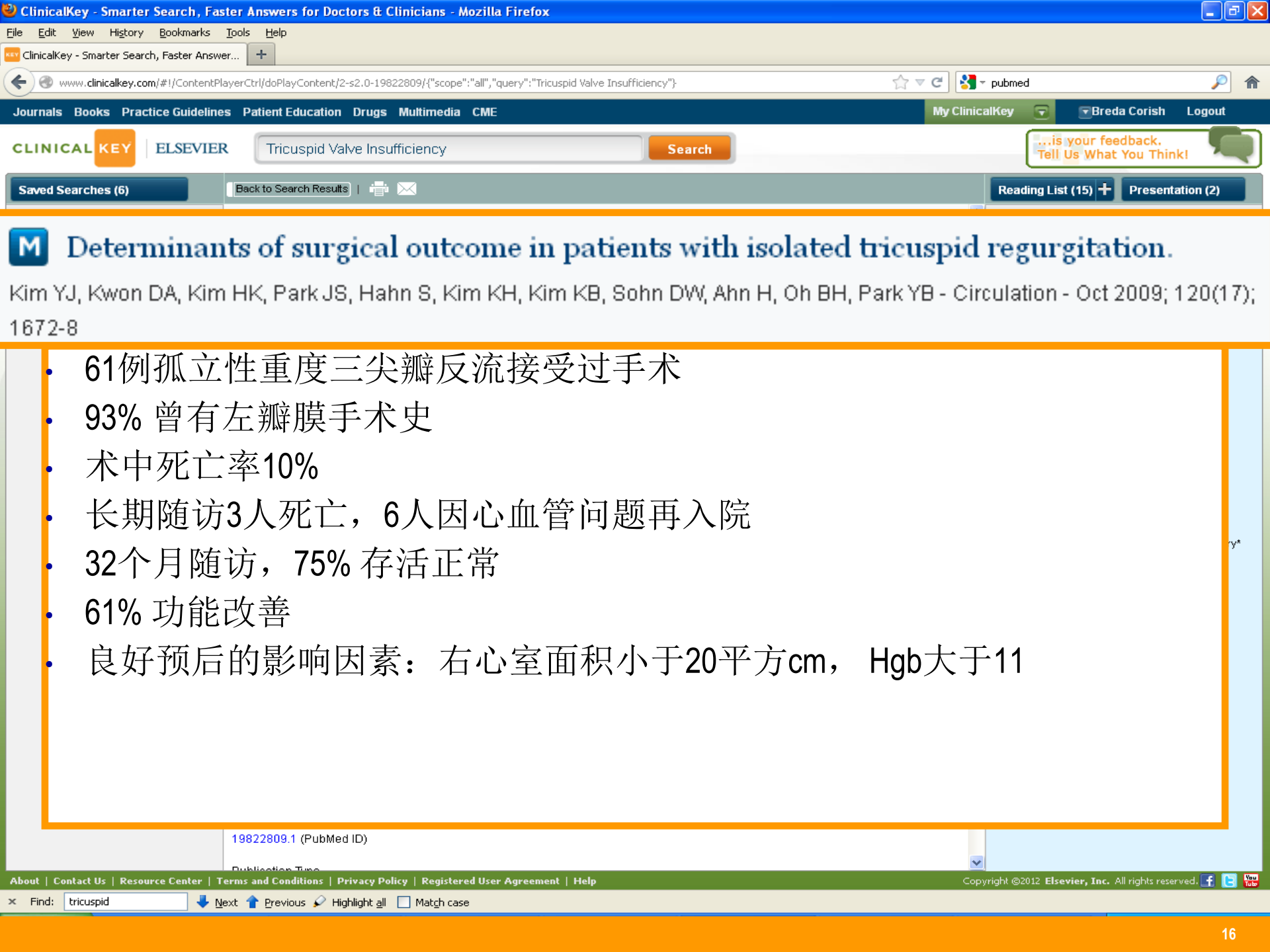

- 61例孤立性重度三尖瓣反流接受过手术
- 93% 曾有左瓣膜手术史
- 术中死亡率10%
- 长期随访3人死亡，6人因心血管问题再入院
- 32个月随访，75% 存活正常
- 61% 功能改善
- 良好预后的影响因素：右心室面积小于20平方cm， Hgb大于11

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1. Leaflet suspension to the contralateral annulus to address restriction or tethering-induced mitral and tricuspid regurgitation in children: results of a case-control study [Journal]
   Myers, Patrick O., MD,Christenson, Jan T., MD,Cikirikcioglu, Mustafa, MD, PhD,Tissot, Cécile, MD,Aggoun, Yacine, MD,Kalangos, Afksendiyos, MD, PhD
   Journal of Thoracic and Cardiovascular Surgery, The, 2010-11-01, Volume 140, Issue 5, 1110-1116
   Video clip is available online. Mitral and tricuspid valve repair, if technically feasible, remains the procedure of choice for most etiologies of mitral and tricuspid regurgitation. However, when the leaflets are retracted or tethered as in type ...

2. INTERVENTIONAL PERSPECTIVE OF TRICUSPID REGURGITATION – CAVAL VALVE IMPLANTATION FROM PRECLINICAL TRIALS TO FIRST HUMAN APPLICATION [Journal]
   Lauten, Alexander,Ferrari, Markus,Figulla, Hans R.
   JACC (Journal of the American College of Cardiology), 2012-03-27, Volume 59, Issue 13, Supplement, E2046-E2046
   Objective Heterotopic valve implantation into the caval veins has been suggested to treat venous congestion in severe TR. We report our experience with this approach from basic preclinical studies to the first human treatment. Methods and Results ...

3. Uncorrected Ebstein's Anomaly With Severe Tricuspid Insufficiency and Atrial Septal Defect [Journal]
   Jung, Christian, MD,Goebel, Bjoern, MD,Figulla, Hans R., MD,Krizanic, Florian, MD,Ferrari, Markus, MD,Lauten, Alexander, MD
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   A 22-year-old patient presented with hemoptysis and dyspnea on exertion. When the patient was a child, an atrial septal defect and Ebstein's anomaly had been diagnosed. The parents and the patient refused any treatment. Physical condition was redu...

4. PREVALENCE OF SIGNIFICANT TRICUSPID REGURGITATION AND ITS CLINICAL SIGNIFICANCE IN PATIENTS WITH SUCCESSFUL PERCUTANEOUS MITRAL VALVULOPLASTY FOR MITRAL STENOSIS, RESULTS FROM 12 YEARS FOLLOW-UP OF ONE CENTER PROSPECTIVE REGISTRY [Journal]
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   Background Although percutaneous mitral valvuloplasty(PMV) is an attractive treatment option for mitral stenosis(MS), incidence of tricuspid regurgitation(TR) after successful PMV and its relationship to clinical outcomes remains unknown. Methods ...

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INTERVENTIONAL PERSPECTIVE OF TRICUSPID REGURGITATION – CAVAL VALVE IMPLANTATION FROM PRECLINICAL TRIALS TO FIRST HUMAN APPLICATION

Alexander Lauten, Markus Ferrari, and Hans R. Figulla

JACC (Journal of the American College of Cardiology), 2012-03-27, Volume 59, Issue 13, Supplement , Pages E2046-E2046

Objective

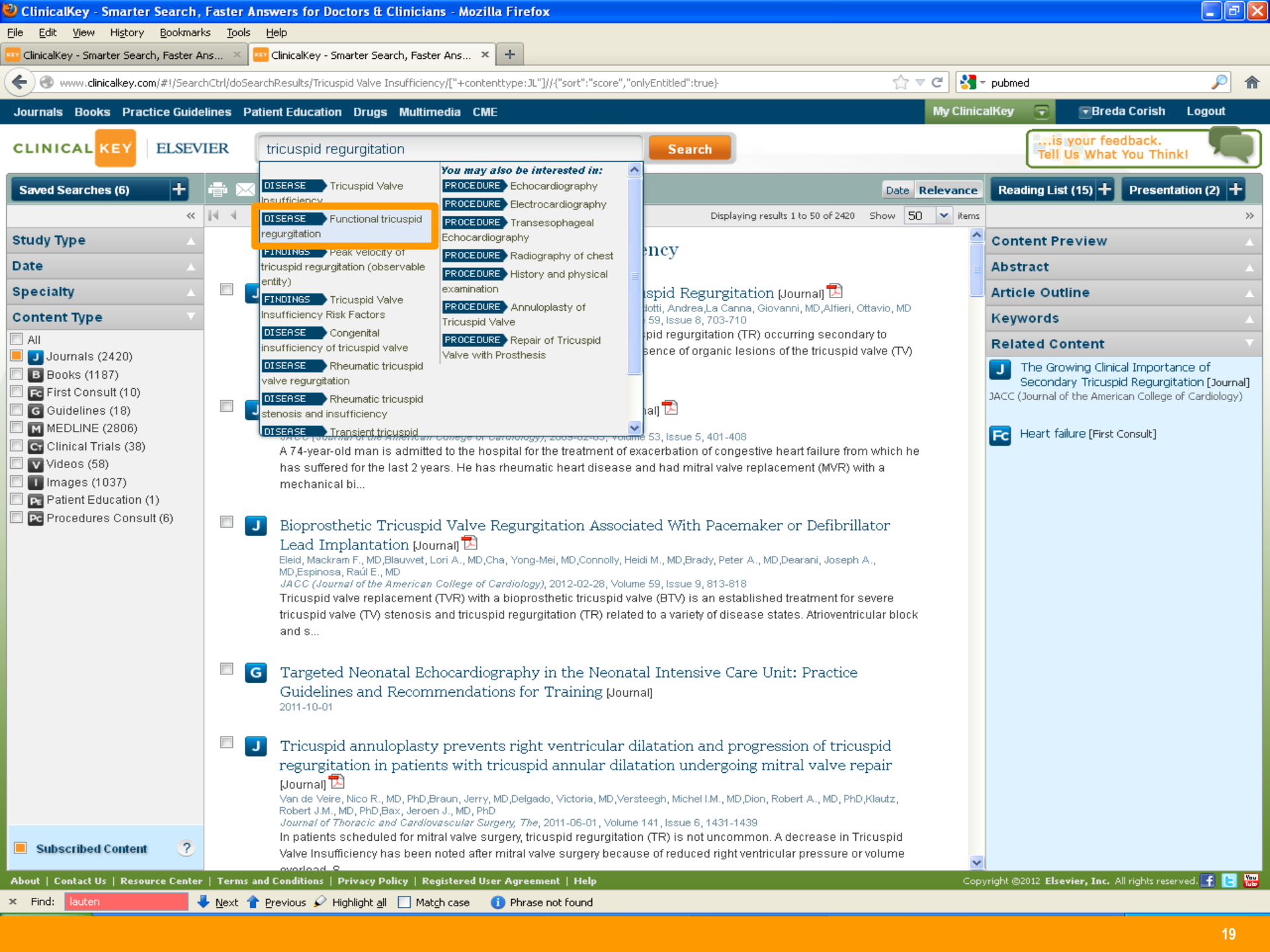
Heterotopic valve implantation into the caval veins has been suggested to treat venous congestion in severe TR. We report our experience with this approach from basic preclinical studies to the first human treatment.

Methods and Results

Proof-of-concept studies were performed in a sheep model. Following the induction of TR, two valves were implanted into the superior and inferior caval (IVC) vein resulting in a significant decrease of the ventricular wave (v'-wave) from 16.2±2.33 to 13.9±2.97mmHg and a significant increase of cardiac output from 2.9±1.16l to 4.20±0.84l/min. Valve function was documented during 6 month follow-up. Autopsy results verified device position and function in all successfully implanted animals. Based on these promising results, the first-in-man concept application was performed for compassionate treatment in an inoperable 79-year-old patient (EuroScore 29.7%, 3 previous heart procedures). In this patient a self-expanding pericardial tissue valve was implanted in the IVC and anchored at the cavo-atrial junction immediately above the hepatic vein inflow. After deployment, excellent device function and valvular competence with full systolic valve closure was confirmed. Hemodynamics confirmed a nearly abolished v-wave in the IVC from 29/19 to 19/12mmHg and a decrease of mean pressure from 19 to 16mmHg. Valve function remained excellent during the first 8 weeks of follow-up. The patient experienced improved physical capacity and was able to resume off-bed acitivities. There was no recurrence of RV failure during follow-up and a partial reduction of ascites. The patient was discharged from hospital into a rehabilitation program.

Conclusion

Transcatheter caval valve implantation for treatment of severe TR is feasible resulting in an immediate abolition of IVC regurgitation with midterm clinical improvement. Thus, in selected non-surgical patients this interventional concept may become a therapeutic option to treat venous regurgitation and improve hepatic congestion. Further confirmatory experience with longer follow-up is required to evaluate the long-term clinical benefit of the procedure as well as potential deleterious effects.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pid regurgitation (TR) occurring secondary to
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53, Issue 5, 401-408
A 74-year-old man is admitted to the hospital for the treatment of exacerbation of congestive heart failure from which he has suffered for the last 2 years. He has rheumatic heart disease and had mitral valve replacement (MVR) with a mechanical bi...
Bioprosthetic Tricuspid Valve Regurgitation Associated With Pacemaker or Defibrillator Lead Implantation [Journal]
Eleid, Mackram F., MD,Blauwet, Lori A., MD,Cha, Yong-Mei, MD,Connolly, Heidi M., MD,Brady, Peter A., MD,Dearani, Joseph A., MD,Espinosa, Raúl E., MD
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Tricuspid valve replacement (TVR) with a bioprosthetic tricuspid valve (BTV) is an established treatment for severe tricuspid valve (TV) stenosis and tricuspid regurgitation (TR) related to a variety of disease states. Atrioventricular block and s...
Targeted Neonatal Echocardiography in the Neonatal Intensive Care Unit: Practice Guidelines and Recommendations for Training [Journal]
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Van de Veire, Nico R., MD, PhD,Braun, Jerry, MD,Delgado, Victoria, MD,Versteegh, Michel I.M., MD,Dion, Robert A., MD, PhD,Klautz, Robert J.M., MD, PhD,Bax, Jeroen J., MD, PhD
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In patients scheduled for mitral valve surgery, tricuspid regurgitation (TR) is not uncommon. A decrease in Tricuspid Valve Insufficiency has been noted after mitral valve surgery because of reduced right ventricular pressure or volume
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Annuloplasty for functional tricuspid regurgitation may sometimes be ineffective because of chamber dilation and valve tethering. This study compared a novel technique, right ventricle (RV)-papillary muscle approximation, with annuloplasty in expe...

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We performed a prospective study of patients with chronic right ventricular (RV) dilation to determine the factors associated with the degree of functional tricuspid regurgitation (FTR). We prospectively enrolled 64 patients with chronic Rotavirus...

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J Impact of the Maze operation on the progression of mild functional tricuspid regurgitation [Journal]
Je, Hyung Gon, MD,Song, Hyun, MD,Jung, Sung Ho, MD,Choo, Suk Jung, MD,Song, Jong Min, MD,Kang, Duk Hyun, MD,Yun, Sung Cheol, PhD,Chung, Cheol Hyun, MD,Song, Jae Kawn, MD,Lee, Jae Won, MD
Journal of Thoracic and Cardiovascular Surgery, The, 2008-11-01, Volume 136, Issue 5, 1187-1192
Mitral valvular disease often causes functional tricuspid regurgitation (FTR), which is associated with right ventricular failure and pulmonary hypertension. Some reports suggest that tricuspid regurgitation (TR) can be improved after successful m...

Abstract

The durability of tricuspid valve (TV) repair by annuloplasty is limited. Identification of mechanisms of recurrent or residual tricuspid regurgitation (TR) after annuloplasty is necessary to improve results of TV repair. The purpose of this study was to investigate echocardiographic determinants of mid-term outcome after TV annuloplasty. This study consisted of 39 patients with functional TR who had echocardiography preoperatively, early postoperatively (5+/-2 days), and >1 year (20+/-6 months) after TV annuloplasty. Detailed echocardiographic measurements were performed, including TR severity, TV annular dimension, TV leaflet displacement, left ventricular (LV) function, and right ventricular (RV) function and pressures. Preoperative leaflet tethering height and area predicted early and mid-term outcome of annuloplasty. Early postoperative LV ejection fraction and TR severity influenced degree of TR >1 year after surgery. In addition, increased RV pressure was related to worse TR during late follow-up. Although TV tethering is an important determinant of recurrent or residual TR, LV and RV function and pressures impact repair durability. These factors identify patients at risk for repair failure; such individuals require development of additional surgical strategies to improve results of tricuspid valve repair and close surveillance after surgery.

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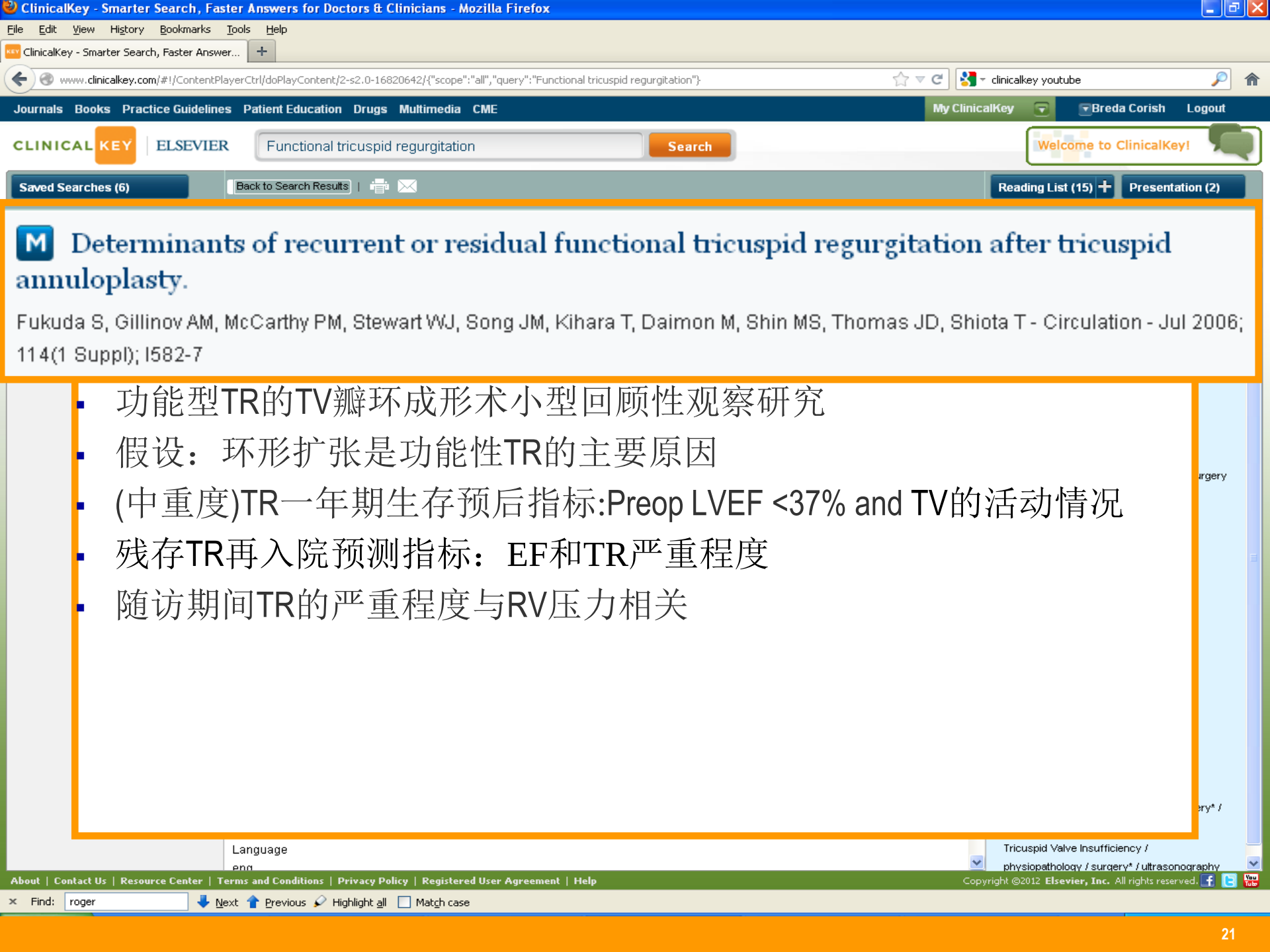
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功能型TR的TV瓣环成形术小型回顾性观察研究
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- **支持手术:**
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  - ✓ 重度三尖瓣反流
  - ✓ 轻度肺高压
  - ✓ 轻度RV扩张，功能正常
  - ✓ TV解剖正常
  - ✓ LV收缩功能正常
  - ✓ 既往无心脏手术史
  - ✓ 无明显并存疾病

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