

Minimally Invasive Mitral Surgery

October 7, 2017

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Approaches to mitral surgery

- Sternotomy
- Partial sternotomy
- Thoracotomy
- Robotic

Incisions for mitral surgery



Considerations in choosing approach

- Additional procedures
- Anatomical limitations
- Cosmesis
- Experience of surgeon
- Outcomes

[Safety of minimally invasive mitral valve surgery without aortic cross-clamp.](#)

Umakanthan R, Leacche M, Petracek MR, Kumar S, Solenkova NV, Kaiser CA, Greelish JP, Balaguer JM, Ahmad RM, Ball SK, Hoff SJ, Absi TS, Kim BS, Byrne JG.

Ann Thorac Surg. 2008 May;85(5):1544-9; discussion 1549-50. doi: 10.1016/j.athoracsur.2008.01.099.

PMID: 18442535

[Minimally invasive right lateral thoracotomy without aortic cross-clamping: an attractive alternative to repeat sternotomy for reoperative mitral valve surgery.](#)

Umakanthan R, Petracek MR, Leacche M, Solenkova NV, Eagle SS, Thompson A, Ahmad RM, Greelish JP, Ball SK, Hoff SJ, Absi TS, Balaguer JM, Byrne JG.

J Heart Valve Dis. 2010 Mar;19(2):236-43.

PMID: 20369510

[Minimally invasive mitral valve surgery expands the surgical options for high-risks patients.](#)

Petracek MR, Leacche M, Solenkova N, Umakanthan R, Ahmad RM, Ball SK, Hoff SJ, Absi TS, Balaguer JM, Byrne JG.

Ann Surg. 2011 Oct;254(4):606-11. doi: 10.1097/SLA.0b013e3182300399.

PMID: 21946219

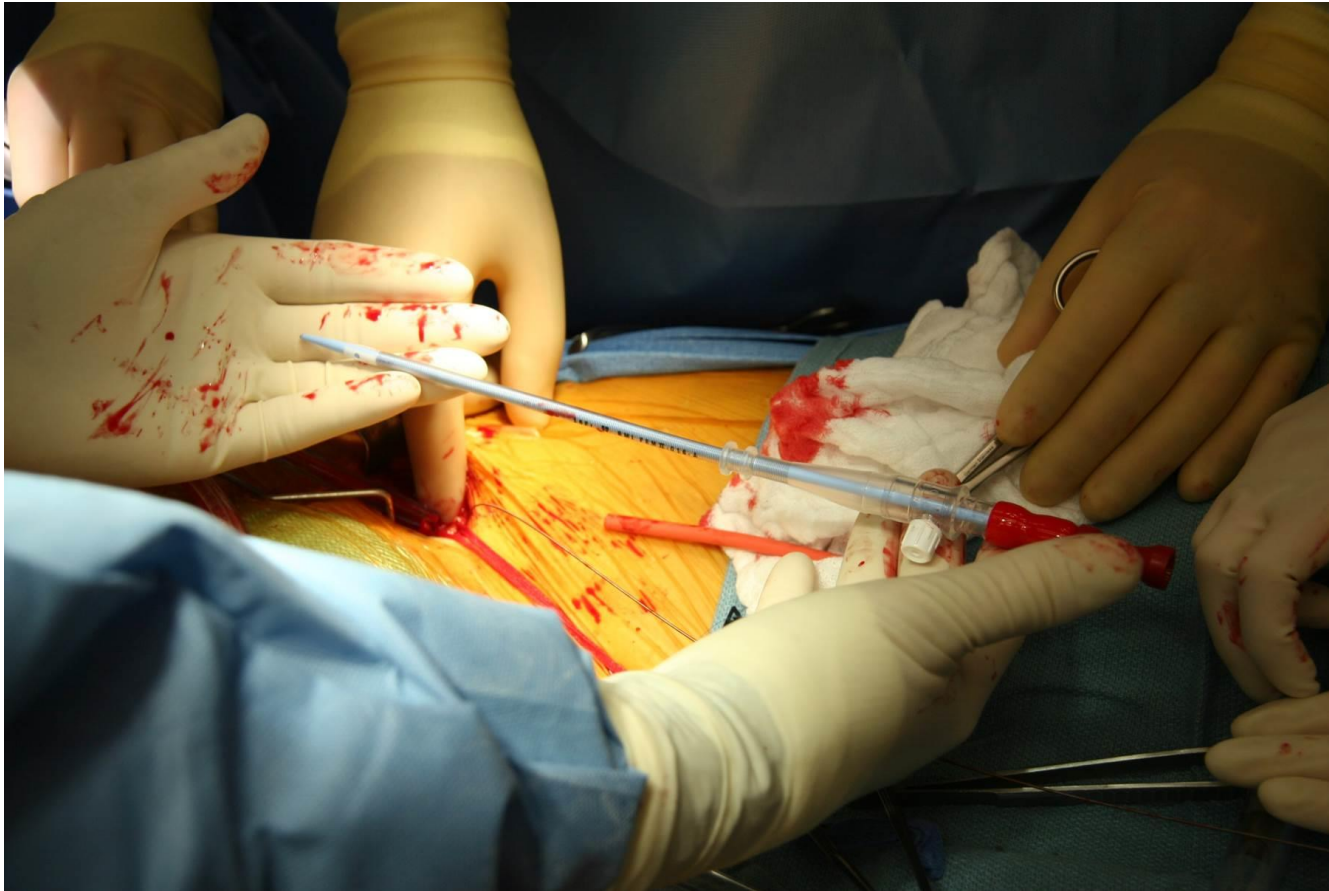
[Minimally invasive fibrillating mitral valve replacement for patients with advanced cardiomyopathy: a safe and effective approach to treat a complex problem.](#)

Brittain EL, Goyal SK, Sample MA, Leacche M, Absi TS, Papa F, Churchwell KB, Ball S, Byrne JG, Maltais S, Petracek MR, Mendes L.

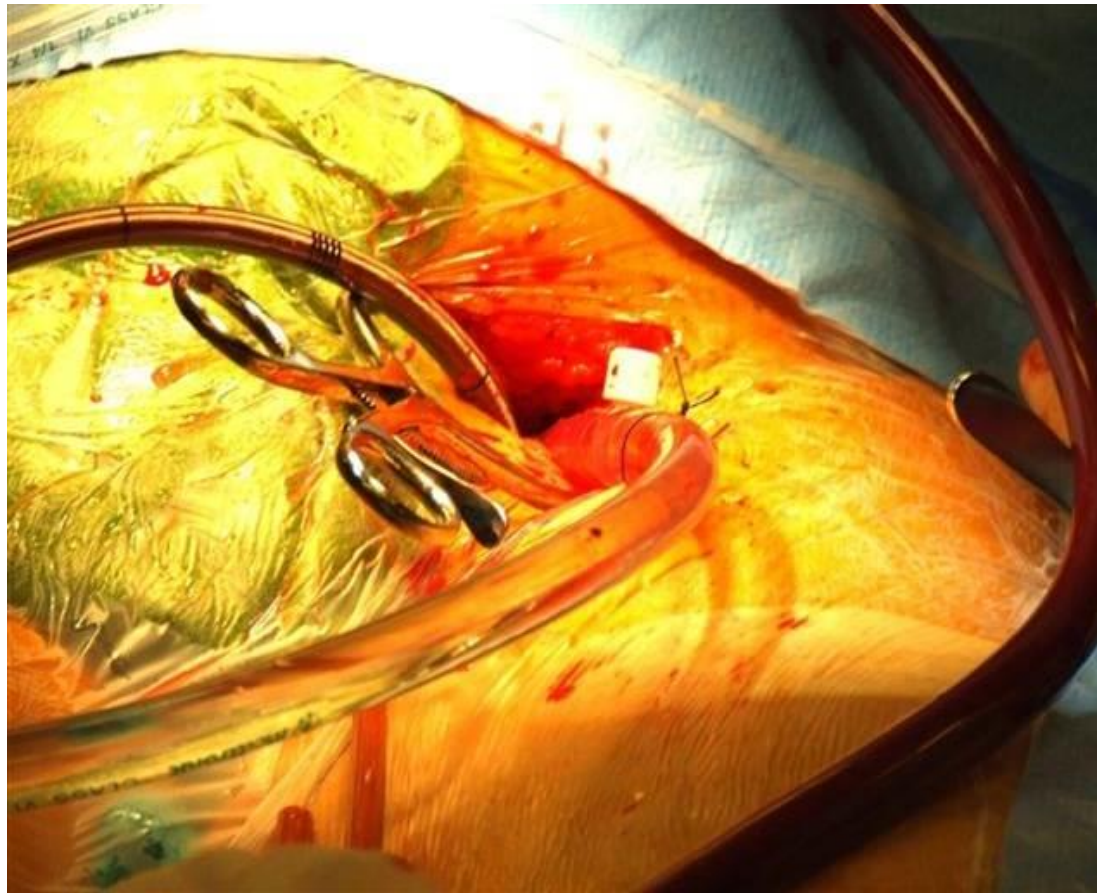
J Thorac Cardiovasc Surg. 2014 Nov;148(5):2045-2051.e1. doi: 10.1016/j.jtcvs.2013.10.062. Epub 2013 Dec 9.

PMID: 24332110 **Free PMC Article**

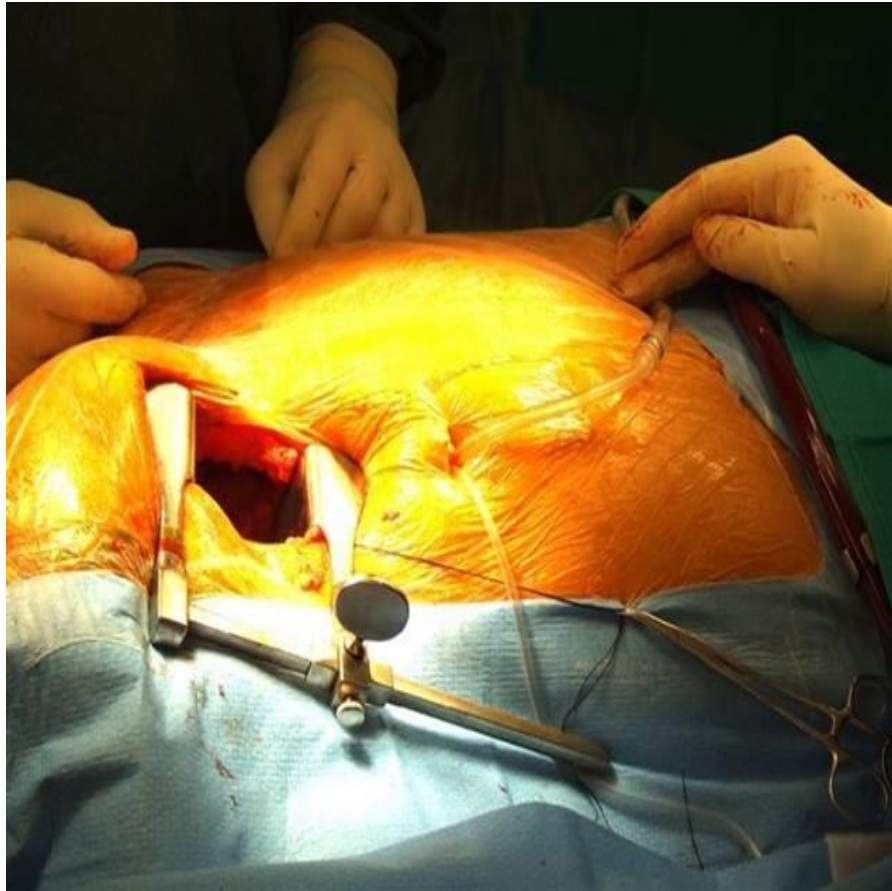
Groin incision



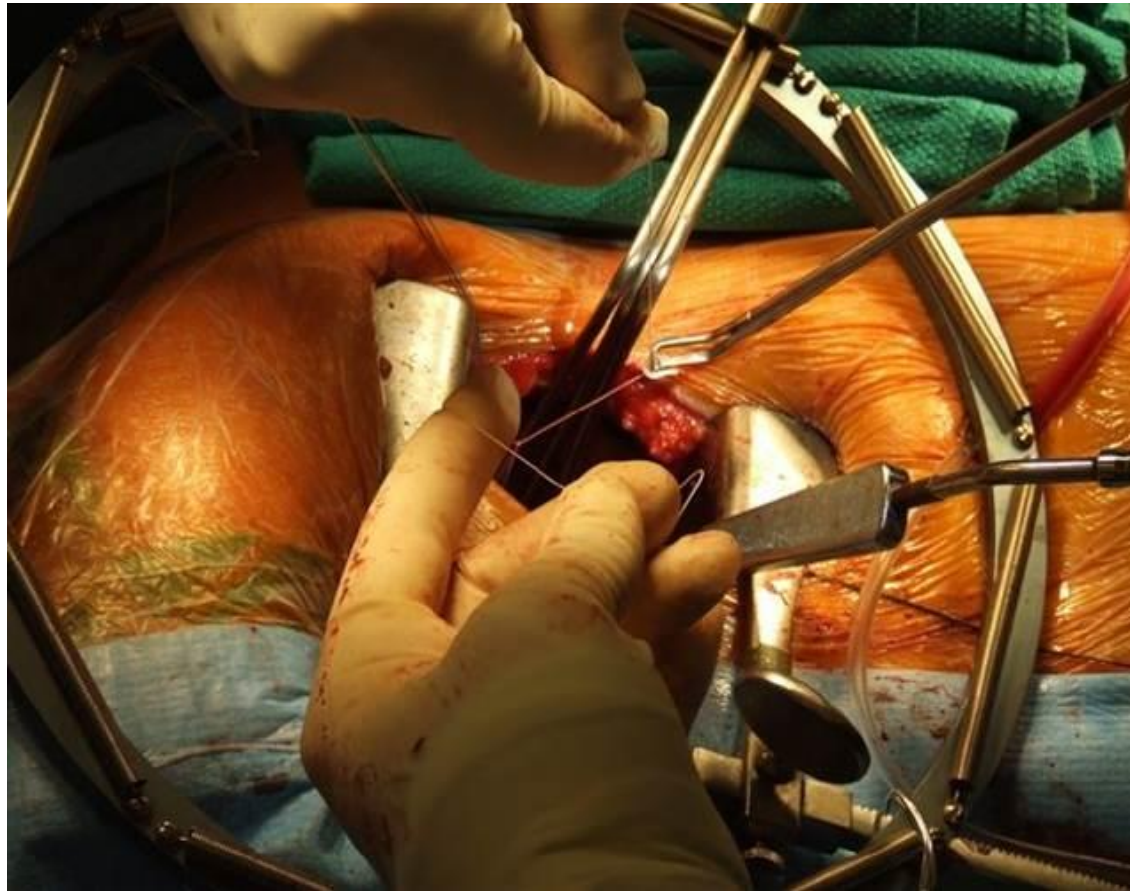
Femoral cannulation

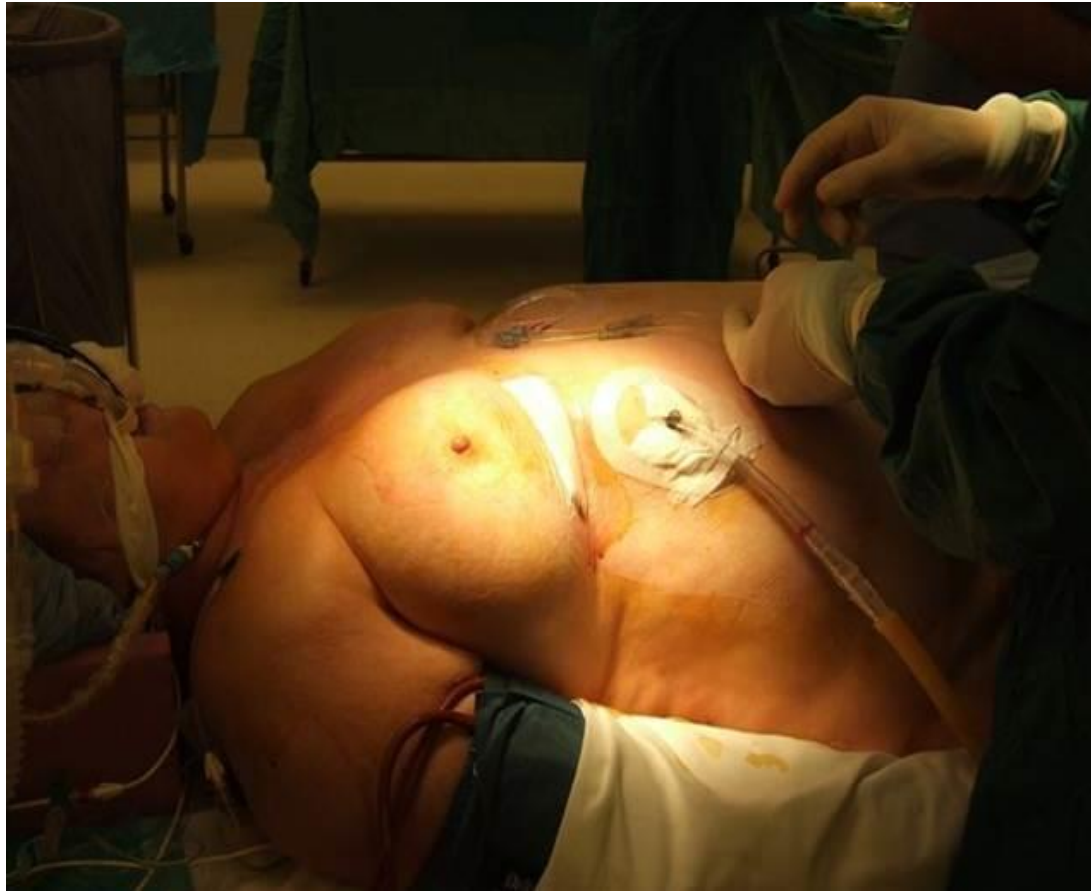


Thoracotomy













Procedures via thoracotomy

- Mitral valve repair
- Mitral valve replacement
- Maze procedure
- Tricuspid valve repair or replacement
- ASD or PFO closure
- Resection of myxoma
- Lead extraction

Advantages of this approach

- Lower mortality, particularly in patient with low EF
- More rapid recovery
- cosmesis