Comparison of sternal pain and narcotic requirement after cardiac surgery between new rigid closure and conventional wire closure: follow-up results of 50 randomizations.

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Comparison of sternal pain and narcotic usage after cardiac surgery between new rigid closure and conventional wire closure

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Objective
To investigate if rigid closure reduces sternal pain

Methods
Prospective randomized CABG +/- valve
Study period: 07/2011 – 1/2013
Rigid fixation: n=24
Wire closure: n=26

Total Narcotic Requirement

Pain Score

Randomization

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Postop Outcomes

Intubation hours
Rigid: 7.6 ± 5.0
Wire: 10.5±10.5
P = 0.21
Intubation >24 h
Rigid: 0
Wire: 2 (7.7%)
P = 0.17
ICU stay hours
Rigid: 51.5 ± 26
Wire: 49 ± 41.7
P = 0.79
ICU stay > 48h
Rigid: 10 (42%)
Wire: 10 (39%)
P = 0.82
Postop stay days
Rigid: 6.6 ± 2.9
Wire: 7.1 ± 4.6
P = 0.65
Postop stay >7d
Rigid: 7 (29.2%)
Wire: 8 (30.8%)
P = 0.90
Postop CVA
Rigid: 1 (4.2%)
Wire: 0
P = 0.29
Atrial Fibrillation
Rigid: 6 (25%)
Wire: 8 (31%)
P = 0.65
Superf sternal infection
Rigid: 1 (4.2%)
Wire: 0
P = 0.29
Deep sternal infection
Rigid: 1 (4.2%)
Wire: 0
P = 0.29
Pneumonia
Rigid: 0
Wire: 1 (3.8%)
P = 0.33

Conclusion
Randomized data showed a trend of fewer narcotic requirement in rigid fixation than in conventional wire closure.

Implications
Rigid fixation may potentially improve immediate sternal pain after open heart surgery.
Less narcotic requirement potentially facilitate early return to the normal activity. Larger population is required to justify study.

Narcotic Requirement Dosage Calculation