

## **The total arterial myocardial revascularization using bilateral IMA and the role of post-operative sternal stabilization to reduce wound infections in a large cohort study.**

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### Objectives:

The total-arterial myocardial revascularization using bilateral IMA shows improved results regarding mortality, long-term survival as well as superior graft patency and thus has become the standard technique according to recent guidelines. On the other hand, those patients might suffer from an increased risk of developing sternal wound infections, especially when being obese or having a medical history of diabetes. One reason for the wound complications may be an early sternum instability, which could be avoided using a thorax support vest (e.g. Posthorax vest). This retrospective study compares the wound complications after bilateral IMA grafting according to the use of a Posthorax vest.

### Methods:

Between April 2015 and December 2015 471 patients received a total-arterial myocardial revascularization using bilateral IMA via median sternotomy and have been administered a Posthorax support vest on 2<sup>nd</sup> postoperative day. We compared those patients with the 515 patients operated via the same access the preceding 9 months. The endpoints have been the incidence of wound infections, when did the wound infection occur and how many wound revisions were needed until wound closure.

### Results:

The demographic data of both groups were similar. A significant advantage for the use of a thorax support vest could be seen regarding the incidence of wound infection ( $p=0.012$ ) and the hospital length of stay when a wound complication did occur ( $p=0.029$ ). See Tab. 1

	Postorax vest (n=471)	No vest (n=515)	p-value
Wound complication [No]	2 (0.4%)	9 (1.7%)	0.044
No of wound revisions per patient	5.0 ± 2.8	5.1 ± 2.4	0.955
Onset of Complication after operation [weeks]	3.0 ± 0.0	3.8 ± 2.4	0.357
Hospital length of stay w/ wound complication [d]	17.0 ± 3.4	29.6 ± 9.7	0.029

Tab 1: Results

### Conclusion:

As seen in this retrospective study, the early perioperative use of a thorax stabilization vest such as the POSTORAX vest can reduce the incidence of sternal wound complications significantly. Furthermore when a wound infection occurred and the patients returned to hospital for wound revision, the patients who had been administered the POSTORAX vest postoperatively will have a significant shorter length of stay until wound closure.