

## Myocardial bridging: a rare speciality without clinical significance?

### *Miyokardiyal köprüleme: Nadir bir özellik mi?*

Myocardial bridges are overall presented in 16% to 80% of the adults due to autopsy based studies (2, 3, 6). Despite this high prevalence in angiographic studies, incidence of this phenomenon is low (1, 2, 3, 6). This is caused by the fact, that thin bridges cause a little compression which is not seen at angiography. Using provocation tests to enhance systolic myocardial compression (e.g. adenosine) myocardial bridges can be revealed (2, 7).

The majority of patients with myocardial bridges are free of any symptoms (1-3). However, myocardial bridging can cause severe complications like atrioventricular blockade, ventricular tachycardia, myocardial ischemia, sudden cardiac death and myocardial infarction (1-7) as shown in the case report by Aytan et al. (8).

Aytan et al. (8) reported the case of a 43-year old patient with non-ST-segment elevation myocardial infarction without coronary artery disease at angiography but a systolic lumen narrowing in the mid proportion of the left anterior descending artery, the typical localisation of myocardial bridges (2,3,6). Authors have clearly shown that a myocardial bridge in this patient caused myocardial infarction possibly by impaired coronary flow reserve and endothelial dysfunction. Aytan et al. treated the patient medically, the "first line" therapy of myocardial bridging (1,2). The patient was followed up to evaluate the success of the  $\beta$ - blocker therapy. To evaluate therapy success and the clinical relevance intravascular ultrasound and intracoronary Doppler ultrasound and pressure devices should be used (1, 2, 4, 6, 7).

Patients refractory to medical therapy can be treated by stenting of the tunnelled segment or surgical myotomy and/or coronary artery bypass surgery (1, 2, 5, 6). The risks of surgical and interventional therapy indicate that negative inotropic drugs should be given first.

In conclusion, in younger patients with clinical signs of myocardial ischemia or established ischemia also myocardial bridging should be considered, further data are required to confirm these empirical data.

**Ali Erdoğan and Harald Greiss**  
**Department of Cardiology and Angiology,**  
**Justus-Liebig-University of Giessen,**  
**Giessen, Germany**

### References

1. Klues HG, Schwarz ER, vom Dahl J, Reffelmann T, Reul H, Pott-hast K, et al. Disturbed intracoronary hemodynamics in myocardial bridging. *Circulation* 1997; 96: 2905-13.
2. Möhlenkamp S, Hort W, Ge J, Erbel R. Update on myocardial bridging. *Circulation* 2002; 106: 2616-22 .
3. Haager PK, Schwarz ER, vom Dahl J, Klues HG, Reffelmann T, Hanrath P. Long term angiographic and clinical follow up in patients with stent implantation for symptomatic myocardial bridging. *Heart* 2000; 84: 403-8.
4. Lovell MJ, Knight CJ: Invasive assessment of myocardial bridges. *Heart* 2003; 89: 699-700.
5. Osula S, Bell GM, Hornung RS. Acute myocardial infarction in young adults: causes and management. *Postgrad Med J Heart* 2002; 78: 27-30.
6. Alegria JR, Herrmann J, Holmes DR, Lerman A, Rihal CS. Myocardial bridging. *Eur Heart J* 2005; 26:1159-68.
7. Escaned J, Cortes J, Flores A, Goicolea J, Alfonso F, Hernandez R, et al. importance of diastolic fractional flow reserve and dobutamine challenge in physiologic assessment of myocardial bridging. *J Am Coll Cardiol* 2003; 42: 226-33.
8. Aytan P, Ulusal G, Coşkun Yenigün E, Yıldırım Ö, Pirpir A, Yıldırım S. Muscular bridge causing non- ST-segment elevation myocardial infarction: a case report. *Anadolu Kardiyol Derg* 2006; 6: 374-5.