

Hemolysis after mitral valve repair

Mitral kapak tamiri sonrası hemoliz

Ergun Demirsoy,¹ Mehmet Ümit Ergenoğlu,¹
Bingür Sönmez²

¹Department of Cardiovascular Surgery, Medical
Faculty of Yeditepe University, İstanbul, Turkey;

²Department of Cardiovascular Surgery, Memorial
Hospital, İstanbul, Turkey

We have read with great interest a case report by Guler et al.^[1] addressing to the association of massive hemolysis after mitral valve repair. We would like to share our similar experience from a report of five cases and update the knowledge in the light of the literature review.^[2]

Intravascular hemolysis is a rare, well-known complication of prosthetic heart valve replacement or repair.^[3] The exact mechanisms of hemolysis have not been well established yet. It is a mode of early repair failure in patients with mitral valvuloplasty and often, thus, requires repeated intervention. The majority of the patients with hemolysis after mitral valve repair are scheduled to undergo mitral valve replacement.^[2,3]

Using transesophageal echocardiography and fluid hydrodynamic simulation, Yeo et al.^[3] were defined several hydrodynamic patterns associated with mitral valve surgical procedure. In their reports, they observed that most patients with hemolysis had hydrodynamic patterns associated with high-shear stresses such as fragmentation, collision and rapid acceleration. Similar results were also reported in our manuscript.^[2] The severity of the mitral regurgitation is not the primary factor in the underlying mechanism of hemolysis. This theory is well supported by several authors in the literature.^[3,4] According to the reports from Lam et al.^[4] and Yeo et al.,^[3] the majority of their mitral valve repair procedures were intact. Most likely, it is the type of regurgitant flow which

forms the hemolysis. Therefore, the clinician should consider hemolysis in a patient with persistently low or declining hematocrit and recurrent mitral regurgitation, if regurgitation is severe with high-shear stress jets, particularly.

In conclusion, following repair with a prosthetic ring it is essential to clearly visualize the hydrodynamic flow patterns postoperatively with transesophageal echocardiography, focusing particularly on possible source of jets previously discussed above. In particular, the findings from the detailed intraoperative transesophageal echocardiography, which was done after cardiopulmonary bypass, may lead the surgeon to revise the repair, or to replace the valve. In the light of supported literature data, we agree and believe that the mitral valve replacement is the major treatment with favorable outcomes.

REFERENCES

1. Güler A, Kürklüoğlu M, Şahin MA, Baysan O, Yokuşoğlu M, Tatar H. Massive hemolysis after mitral valve repair. *Turk Gogus Kalp Dama* 2012;20:364-6.
2. Demirsoy E, Yılmaz O, Sirin G, Baran T, Tekin S, Sener D, et al. Hemolysis after mitral valve repair: a report of five cases and literature review. *J Heart Valve Dis* 2008;17:24-30.
3. Yeo TC, Freeman WK, Schaff HV, Orszulak TA. Mechanisms of hemolysis after mitral valve repair: assessment by serial echocardiography. *J Am Coll Cardiol* 1998;32:717-23.
4. Lam BK, Cosgrove DM, Bhudia SK, Gillinov AM. Hemolysis after mitral valve repair: mechanisms and treatment. *Ann Thorac Surg* 2004;77:191-5.

Author Response

Dear Editor,

We have read with great interest the letter about our case report entitled "Massive hemolysis after mitral valve repair".^[1] In this letter, the authors have emphasized the importance of regurgitant jet flow patterns, which can be analyzed through postoperative transesophageal echocardiography in detail and give important clues on the risk of hemolysis after the repair. However, the question arises about what



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Correspondence: Mehmet Ümit Ergenoğlu, M.D. Yeditepe Üniversitesi Tıp Fakültesi, Kalp ve Damar Cerrahisi Anabilim Dalı, 34752 Kozyatağı, İstanbul, Turkey.

Tel: 0216 - 578 47 46 e-mail: mergenoglu@yeditepe.edu.tr

can be done when such an abnormal flow pattern is detected? Is it wise to perform a mitral valve replacement depending on abnormal flow pattern only? We agree that mitral valve replacement is the only option for the patients presenting with severe hemolysis after their initial repair. However, most of us would argue the necessity of mitral valve replacement depending on abnormal flow patterns only detected on postoperative transesophageal echocardiography.

REFERENCES

1. Güler A, Kürklüoğlu M, Şahin MA, Baysan O, Yokuşoğlu M, Tatar H. Massive hemolysis after mitral valve repair. *Türk Gogus Kalp Dama* 2012;20:364-6.

Mustafa Kürklüoğlu,¹ Adem Güler,¹ Mehmet Yokuşoğlu²
Departments of ¹Cardiovascular Surgery, ²Cardiology, Gülhane
Military Medical School, Ankara, Turkey;

On behalf of all authors:

*Correspondence: Mehmet Yokuşoğlu, M.D. Gülhane Askeri Tıp
Akademisi Kardiyoloji Anabilim Dalı, 06010 Etlik, Ankara, Turkey.*

Tel: +90 312 - 304 42 51 e-mail: myokusoglu@yahoo.com