



MitraClip Endocarditis – Complete Cardiac Surgery

Kamil Baczewski*, Marek Czajkowski and Janusz Stążka

Department of Cardiac Surgery, Medical University of Lublin, Poland

Introduction

MitraClip procedure is the treatment of mitral valve regurgitation inpatients at very high surgical risk. It was first introduced in 2003 and there are more patient qualified for this treatment every year. Bigger number of procedures means more complications. Endocarditis is rare but very serious, and life threatening complication. In 2008 only 6 cases of endocarditis have been reported but until 2020 there have been 17 cases of endocarditis described, treated mostly by mitral valve replacement [1,2]. We describe the most difficult case which contains mitral valve replacement, tricuspid valve repair and wires and pacemaker replacement.

After qualification by the heart team the MitraClip procedure was performer. Two XTR clips and one NTR were applicated, before the procedure single dose of 2 g Cefazolin had been given. Seven days after the MitraClip insertion patient was discharged home with positive echocardiography outcome.

Materials and Methods

Six months later patient was admitted to the emergency room with stroke symptoms. After CT scan he was moved to neurology department. Patient reported fever for proceeding weeks (37°C to 39°C = 98.6°F to 102.2°F). After transthoracic and transesophageal echocardiography endocarditis was diagnosed. From clinical pictures septic stroke was very likely. Patient was moved to the cardiology department and Vancomycin was administered. Secondly, patient was transferred to the cardiac surgery department for surgical treatment. The problem was not only infected MitraClip and regurgitation of mitral valve, but also significant tricuspid regurgitation. Holistic treatment in this case should include replacement of the electrodes and the pacemaker because of the increased risk of infection. Before the surgery the Logistic EuroSCORE II was calculated and equaled 35.94%.

Results

The operation was performed on Friday, March 13th. In the operating theatre full sternotomy was performed and the cardiopulmonary bypass was connected with the cannulation of the vena cava superior and inferior. During the cardiopulmonary bypass right atrium and atrial septal were opened. At first mitral valve was replaced by using 31-mm biological prosthesis (Hancock II), then the intracardiac wires were cut as high as possible in the area of the vena cava superior. On beating heart tricuspid valve was repaired by annuloplasty with use of the Carpentier-Edwards Ring 34-mm. The electrodes were sewn on right and left ventricles and connected with the peacemaker implanted in the right subclavian area. Postoperative TEE demonstrated good functioning of both valves. Patient was transmitted to the ICU. Unfortunately, few hours later patient had to be reoperated due to bleeding. The patient was extubated in the first day after the surgery and moved to the cardiac

OPEN ACCESS

*Correspondence:

Kamil Baczewski, Department of Cardiac Surgery, Medical University of Lublin, Aleje Raclawickie 1, 20-059 Lublin, Poland,
E-mail: drkamilbaczewski@gmail.com

Received Date: 26 Nov 2021

Accepted Date: 31 Dec 2021

Published Date: 04 Jan 2022

Citation:

Baczewski K, Czajkowski M, Stążka J. MitraClip Endocarditis – Complete Cardiac Surgery. *Clin Surg.* 2022; 7: 3389.

Copyright © 2022 Kamil Baczewski.

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Figure 1: Chest X-ray before surgery. MitraClips on mitral valve, pacemakers and wires in right heart.



Figure 2: Mitral valve with MitraClips after resection.



Figure 3: Chest X-ray after all procedures. Biological mitral valve prosthesis and tricuspid valve annuloplasty. Epicardial wires on right ventricle and pacemaker on right side of chest.

surgery unit after six days. From replaced valve MRSE (Methicillin Resistant *Staphylococcus epidermidis*) was cultured. Vancomycin and Gentamycin intravenously were continued for the next days of hospitalization. During hospitalization pacemakers' action was tested and verified. After 25 days patient was discharged home in good condition (Figures 1-3).

Discussion

Very often patients were hospitalized with symptoms of stroke [3]. The most common organism of infective endocarditis was *Staphylococcus aureus*. The average preoperative EuroSCORE was 35.94% [2], the same like in our patient which we can find in our polish database <https://krok.csioz.gov.pl> but sometimes score can be higher than 40% [4]. Surgical intervention was chosen in approximately 70% of the treatment. Most often the mitral valve was replaced, but Henning Hermanns, in his second case, also described tricuspid valve repair [4].

Conclusion

This case report describes three procedures during one operation. There are only few reports describing the mitral valve replacement with or without annuloplasty of tricuspid valve after MitraClip procedure. The wires' and pacemaker' replacement were the new and very important maneuvers in this kind of cases. First of all, this procedure allowed the achievement of the good effect of the tricuspid valve annuloplasty. Secondly the wires could be the source of the new endocarditis few weeks after the surgery. Despite the high risk and the procedure difficulty the holistic treatment should be performed by the cardiac surgeons in such procedures.

References

1. Roslan A, Kamsani SH, Aktifanus ATJ, Krishnan M, Hakim N, Samsudin WNM. "Butterfly in the heart: infective endocarditis after MitraClip procedure. CASE. 2018;2:63-5.
2. Leow K, Isreb C, Brown M. "MitraClip-related infective endocarditis in a frail, elderly patient: A case report." Eur Heart J: Case Rep. 2020;4:1-4.
3. Tayyar R, Khan O, Chauhan K, Ines A, Carnish E. "Pseudomonas MitraClip" endocarditis: A case report and review of literature." IDCases. 2020;19:e00665.
4. Hermanns H, Wiegerinck EMA, Lagrand WK, Baan J Jr, Cocchieri R, Kaya A. "Two cases of endocarditis after MitraClip procedure necessitating surgical mitral valve replacement." Ann Thorac Surg. 2019;107:e101-e103.