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## Case Report

# Very early onset traumatic hemolysis following mitral valve repair in a pediatric patient

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## ABSTRACT

Hemolytic anemia following a mitral valve repair is a very rare complication, with only 70 cases reported worldwide.

We present a case of an 8-year-old girl who presented with a very early onset hemolytic anemia following a mitral valve repair with ring annuloplasty, which necessitated a reoperation.

The report also discusses the various mechanisms of traumatic hemolysis associated with valve repair and probable lessons learnt and ways to avoid this complication.

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## 1. Introduction

Hemolytic anemia following mitral valve replacement with either a mechanical or a bioprosthetic valve is a known complication. However, massive hemolysis following a mitral valve repair (MV repair) is an extremely rare complication, with only 70 cases reported in the worldwide literature.<sup>1</sup> We present a very early onset hemolytic anemia occurring in an 8-year-old girl following MV repair with ring annuloplasty which necessitated a reoperation.

## 2. Case report

An 8-year-old girl presented with Cl III dyspnea and heart failure. On echocardiography, she had rheumatic heart disease, minor chordal rupture, prolapse of A1 and A2 segment

of anterior mitral leaflet leading to severe mitral regurgitation (MR), mild aortic regurgitation, and severe pulmonary hypertension. She underwent a MV repair with creation of two neo-chordae using PTFE pledgeted sutures and annuloplasty was done with a 27 mm Annuloplasty ring (St Jude Medical Inc, MN, USA). Trans-esophageal echocardiography done intraoperatively suggested Grade 1 residual MR with no flow acceleration across the mitral valve, an essentially satisfactory result (Figs. 1 and 2).

The patient was shifted to the ICU with good hemodynamics.

Within 2–3 h of shifting to the ICU, the urine, which was clear after surgery, became dark brown colored and the hemoglobin (Hb) fell by 2 gm/dl, in absence of significant drainage, necessitating a transfusion. The urine continued to be dark colored. The patient was extubated after 12 h, the next morning and the lab reports revealed a further drop in Hb by 1 gm/dl to 9 gm/dl, requiring another transfusion.

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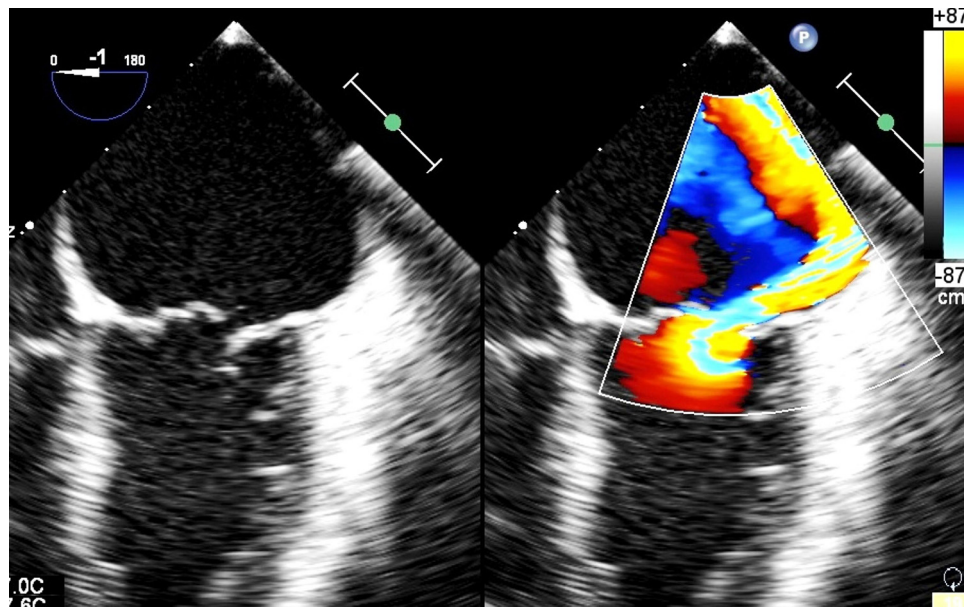


Fig. 1 – The preoperative TEE image showing preoperative MR jet.

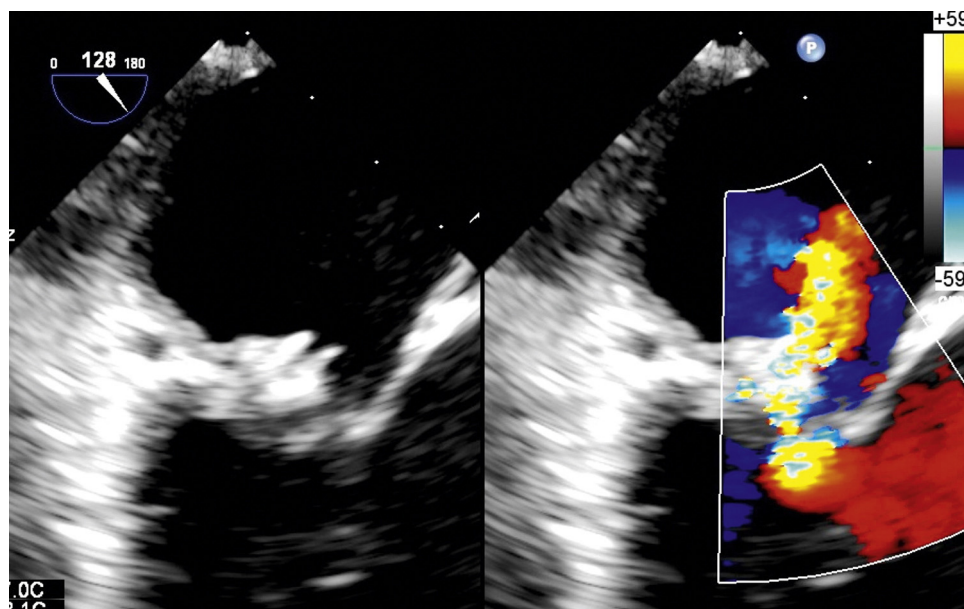


Fig. 2 – Postoperative TEE image of the repaired mitral valve showing the ring protruding into the cavity of LA.

The patient was then investigated in detail for hemolysis and the results are tabulated below.

Investigation	Preoperative values	Postoperative (after 48 h)
Hemoglobin	12.4	9.1
LDH	-	4999
Haptoglobin	-	<6.75
Urine free Hemoglobin	-	Present
Reticulocyte count	-	3
Bilirubin (total/Indirect)	0.8/0.3	5.2/3.2

Peripheral smear	-	s/o Traumatic hemolytic anemia
Coombs test (direct and indirect)	-	Negative
G6PD	-	Negative
Creatinine	0.4	0.6
PCV transfusion	-	3

The patient was treated with adequate hydration and forced diuresis to protect the kidneys (Table 1).

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