Fortis Escorts
HEART INSTITUTE

Escorts Heart Institute and
Research Centre Ltd.
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DISCHARGE SUMMARY

PATIENT NAME: BABY OF VASEEM SAIFI	AGE: 6 MONTHS & 18 DAYS, SEX: M
REGN: NO: 13228122	IPD NO: 4281/25/1201
DATE OF ADMISSION: 07/01/2025	DATE OF DISCHARGE: 14/01/2025
CONSULTANT: DR. K. S. IYER / DR. NEERAJ AWASTHY	

DISCHARGE DIAGNOSIS

1. **S/P Patent ductus arteriosus stenting using Xience prime coronary Stent (3.5 mmX18 mm) and balloon atrial septostomy on 27/06/2024 at Fortis Escorts Heart Institute, New Delhi for**
    - **Complex cyanotic congenital heart disease**
    - **Pulmonary Atresia**
    - **Fossa ovalis atrial septal defect**
    - **Hypoplastic tricuspid valve**
    - **Hypoplastic right ventricle**
    - **Patent ductus arteriosus dependent pulmonary circulation**
    - Normal Sinus Rhythm
    - Normal LVEF
2. **Now elective admission for Bidirectional Glenn Shunt**
    - **Complex Cyanotic Congenital Heart Disease with decreased pulmonary blood flow**
    - **Single ventricle physiology**
    - **Pulmonary atresia with intact interventricular septum**
    - **Hypoplastic tricuspid valve**
    - **Hypoplastic right ventricle**
    - **Atrial septal defect (S/P balloon atrial septostomy)**

OPERATIVE PROCEDURE

Right sided Bidirectional Glenn Shunt (The cephalic end of Superior vena cava anastomosed end-side to the Right pulmonary artery) + Azygous vein ligation + Patent ductus arteriosus ligation with stent retrieval done on 08/01/2025

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RESUME OF HISTORY

Baby of Vaseem Saifi is a 6 months old male infant (date of birth: 22/06/2024) from Kashipur (Uttarakhand) who is a case of congenital heart disease. He is 1st in birth order and is a product of full term LSCS (lower segment caesarian section) delivery. His birth weight was 2.8 kg. Maternal age is currently 29 years.

On day 2nd of life mother noticed bluish discoloration of fingers and lips for which he was shown to pediatrician. During evaluation, cardiac murmur was detected. Echo was done which revealed Congenital heart disease - Child was referred to FEHI for further management. Child was admitted at Fortis Escorts Heart Institute, New Delhi on 25/06/2024 for further evaluation and management

Baseline investigation (CBC, viral markers, blood group, cross match) were sent. Blood investigation revealed (Hb= 16.3gm/dl, TLC 11.61, N= 72, L= 20, platelets = 525, INR= 1.07, PT= 12.0. BUN= 21. S creatinine= 1.08. total bilirubin = 6.53. direct bilirubin= 0.42. SGOT= 42. Echo was done which revealed patent foramen ovale (right to left shunt). Pulmonary atresia. Duct dependent pulmonary circulation. He was started on intravenous fluid, Prostin infusion. Child was planned for Patent ductus arteriosus stenting.

He underwent Patent ductus arteriosus stenting using Xience prime coronary Stent (3.5 mmX18 mm) and balloon atrial septostomy on 27/06/2024. Post procedure he was kept in CCU for hemodynamically monitoring. Injection dobutamine, Milrinone and heparin were started. Gradually weaned off from ventilator and kept on nasal prongs. Ionotropic support weaned gradually. Patient started on feed and gradually increased to full feed. Currently he is maintaining saturation 86% on room air. HR= 120/min, RR = 38. No respiratory distress and maintaining vitals. He was discharged on 01/07/2024 in stable condition with advice to regular follow up.

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CARDIAC CATHETERISATION AND ANGIOGRAPHY REPORT
DIVISION OF PEDIATRIC CARDIOLOGY

NAME	:	Baby OF Vaseem saifi	SEX	:	MALE	REGISTRATION NUMBER	:	13228122
			WEIGHT	:	2.8	IPD NO	:	118982/24/1201
HEIGHT (cms)	:	40	HB(%)	:	16.3	CATH NO	:	
BSA(M Sq)	:	0.16						
SEDATION	:	GA						

ADMITTING DIAGNOSIS	:	
		Situs solitus Levocardia D loop
ABNORMALITIES	:	PFO (Right to left shunt) Aneurysmal IAS Pulmonary atresia HYPOPLASTIC TV Hypoplastic RV Restrictive PDA Vertical PDA supplying branch PA's PDA dependent pulmonary circulation
PROCEDURE DONE	:	PDA stenting with atrial septostomy
PREVIOUS SUREGRY		NIL
VASCULAR ACCESS	:	

	Size
LEFT AXILLARY ARTERY	4F
RIGHT FEMORAL vein	5F

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CATHETERS/ BALLOONS/STENTS	FRENCH	SIZE	LENGTH
Xience Prime coronary Stent		3.5 X 18 mm	
GUIDE WIRES:	**SIZE**	**LENGTH**	**CONFIGURATION**
WHISPER coronary wire	0.014	180	Extra Floppy

Hemodynamics :

	Pressure Data:					
	Site	Sys	Dia	Mean	Sat	PO2
	AAO	55	28	38	50.5	35

Angiogram and comments :	
	Aortogram (Left Lateral and LAO 10 cranial 45) showed PDA arising from undersurface of arch filling both branch PAs Stenting of the patent ductus arteriosus done using Xience prime coronary Stent (3.5 mmX18 mm) Post stenting Aortogram (lateral 10 caudal 45) showed PDA stent in situ with good flow across stent and Branch PA's. Post PDA Stenting , balloon atrial septostomy was done with 5F Fogarty catheter followed by (11mmx3cm) Tyshak II balloon dilation of atrial septum. Post Procedure TTE showed PDA stent in situ with good bolus of flow across PDA stent and branch Pas AND laminar flow across atrial septal defect.

Final Diagnosis:	
	Cyanotic congenital heart disease Pulmonary Atresia FO ASD Hypoplastic TV Hypoplastic RV PDA dependent pulmonary circulation Normal Sinus Rhythm Normal LVEF S/P PDA stenting using Xience prime coronary Stent (3.5 mmX18 mm) and balloon atrial septostomy on 27/06/2024

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He was on regular follow up.

He was again seen at FEHI, New Delhi on 07/01/2025. His saturation at that time was 80% with weight of 7.4 Kg. Echo was done which revealed normal segmental analysis, good interatrial communication (2 – 3 jets) right to left shunt, hypoplastic tricuspid valve, hypoplastic right ventricle (muscle bound right ventricle), pulmonary atresia, intact interventricular septum, PDA stent in situ, good flow across Patent ductus arteriosus stent, good flow in branch Pulmonary arteries, confluent branch Pulmonary arteries, Right pulmonary artery 6.25mm, Left pulmonary artery 6.3mm (Exp 6.25mm), laminar LV outflow, laminar flow in arch, no Coarctation of aorta, normal LVEF, multiple collateral in right ventricle and IVS, no collection.

He was advised surgical management (Bidirectional Glenn Shunt).

Now he is admitted at FEHI, New Delhi for further evaluation and management. On admission, his saturation was 80%, His Hb 15.6g/dl and Hematocrit 49.5% on admission.

In view of his diagnosis, symptomatic status, echo findings he was advised early high risk surgery after detailed counselling of family members regarding possibility of prolonged stay as well as uncertain long term issues.

Weight on admission 7.4 kg, Height on admission 65 cm, Weight on discharge 7.4 kg

His Weight on admission 7.4 kg. (15^{th} – 50^{th} Percentile); Z score 0 to – 2 SD

His blood Group O negative

Baby and his Mother Father SARS-COV-2 RNA was done which was negative.

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All blood and urine culture were sterile.

INVESTIGATION:

ECHO

Done on 25/06/2024 revealed Situs, solitus, levocardia D-loop ventricle. Normal drainage of pulmonary and systemic vein.PFO (right to left shunt). Aneurysmal IAS. Hypoplastic TV. Hypoplastic right ventricle. Pulmonary atresia. Duct dependent pulmonary circulation. Confluent branch PAs. Intact IVS. Laminar LV outflow. Tricuspid aortic valve. Normal origin coronaries. Laminar flow in arch. Left arch. No coarctation of aorta. No LSVC. Vertical PDA supplying branch PAs. Normal LVEF. RV muscle bounded. Multiple collateral in RV and IVS. TV= 4mm (z score= -5.67). RPA= 4mm. LPA= 3.8mm.

Echo Done revealed PDA stent in situ. Good flow across PDA stent. Normal biventricular function. Good flow in branch PAs. Good interatrial communication. No collection

Done on 27/07/2024 revealed Patent ductus arteriosus stent in situ, good flow across Patent ductus arteriosus stent, good interatrial communication (right to left), normal systemic and pulmonary venous drainage, hypoplastic tricuspid valve, hypoplastic right ventricle, RV muscle bounded, good flow in branch Pulmonary arteries, laminar LV outflow, intact interventricular septum, laminar flow in arch, tricuspid aortic valve, no Coarctation of aorta, no left superior vena cava, left arch, normal LVEF, multiple collateral in right ventricle and interventricular septum, no collection, Right pulmonary artery 3.4mm, Left pulmonary artery 3.7mm (Exp 4mm), TV annulus 5mm (Z score -4.97)

Done on 10/09/2024 revealed Patent ductus arteriosus stent in situ, good bolus in stent, interatrial communication, hypoplastic right ventricle and tricuspid valve, no mitral regurgitation, normal ventricular function

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Done on 09/11/2024 revealed PDA stent in situ, good flow across PDA stent, good interatrial communication (Bidirectional shunting, predominantly right to left), hypoplastic tricuspid valve, no mitral regurgitation, hypoplastic right ventricle, intact interventricular septum, good flow in branch Pulmonary arteries, laminar LV outflow, no Coarctation of aorta, no left superior vena cava, normal LVEF, no collection, Right pulmonary artery 7mm, Left pulmonary artery 6mm (Exp 6.25

Done on 07/01/2025 revealed normal segmental analysis, good interatrial communication (2 – 3 jets) right to left shunt, hypoplastic tricuspid valve, hypoplastic right ventricle (muscle bound right ventricle), pulmonary atresia, intact interventricular septum, PDA stent in situ, good flow across Patent ductus arteriosus stent, good flow in branch Pulmonary arteries, confluent branch Pulmonary arteries, Right pulmonary artery 6.25mm, Left pulmonary artery 6.3mm (Exp 6.25mm), laminar LV outflow, laminar flow in arch, no Coarctation of aorta, normal LVEF, multiple collateral in right ventricle and IVS, no collection

POST OP ECHO

Done on 08/01/2025 revealed patent and well-functioning right Bidirectional Glenn Shunt, good flow in branch Pulmonary arteries, laminar LV inflow, mild mitral regurgitation, laminar LV outflow, LVEF 50%, no collection

Done on 09/01/2025 revealed patent and well-functioning right Bidirectional Glenn Shunt, good flow in branch Pulmonary arteries, laminar inflow, mild mitral regurgitation, laminar LV outflow, normal LVEF, no collection

Done on 13/01/2025 revealed borderline interatrial communication, patent and well-functioning right Bidirectional Glenn Shunt, good flow in branch Pulmonary arteries, laminar inflow, normal LVEF, no collection

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ABDOMINAL USG Done on 08/01/2025 revealed Liver shows homogeneous echopattern. Hepatic veins are prominent. Portal vein measures 3mm in diameter (normal). Intrahepatic biliary radicles are not dilated. Gall bladder shows normal anechoic pattern. G.B. wall thickness is normal CBD is not dilated. Pancreas appears normal in size & echogenicity. Spleen is normal in size & echogenicity (Span 4.6cm). Both kidneys are normal in location and size. Cortical echogenicity is increased on both sides. No dilatation of pelvicalyceal system seen. Right kidney measures 5.5cm x 2.1cm. Left kidney measures 5.0cm x 2.2cm. Urinary bladder is partially filled. No calculi / filling defect seen. No ascites.

USG BRAIN Done on 08/01/2025 revealed No obvious focal lesion seen in brain parenchyma. Ventricles are normal. No midline shift seen.

COURSE DURING STAY IN HOSPITAL (INCLUDING OPERATIVE PROCEDURE AND DATES)

Right sided Bidirectional Glenn Shunt (The cephalic end of Superior vena cava anastomosed end-side to the Right pulmonary artery) + Azygous vein ligation + Patent ductus arteriosus ligation with stent retrieval done on 08/01/2025

REMARKS: Diagnosis: - Cyanotic Congenital Heart Disease with decreased pulmonary blood flow, Sigle ventricle physiology, Pulmonary atresia with intact interventricular septum, hypoplastic tricuspid valve, hypoplastic right ventricle. interatrial septum.

S/P Patent ductus arteriosus stenting + atrial septostomy – 27/06/2024. Operation:- Right sided Bidirectional Glenn Shunt, azygous vein ligation, Patent ductus arteriosus ligation with stent retrieval. Operative Findings: - Pericardium normal, Innominate normal, Superior vena cava good size, no left superior vena cava, Inferior vena cava Normal, right atrium / left atrium normal, right ventricle hypoplastic, Aorta normal, Main pulmonary artery small sized, Branch Pulmonary arteries adequate size, Coronaries normal, Patent ductus arteriosus stent in situ, in position, patent. Procedure: - Routine induction of General Anaesthesia and placement of monitoring lines. Standard median sternotomy. Right lobe of thymus excised. Pericardial cradle created. Systemic heparinization (300 U/kg) given. Aorta, Right pulmonary artery, Main pulmonary artery, Superior vena cava and azygous dissected, azygous looped and ligated. Aorta, right atrium, high Superior vena cava cannulation done. Patent ductus arteriosus dissected,

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and ligated. Main pulmonary artery opened transversely, Patent ductus arteriosus stent retrieved in whole, Main pulmonary artery closed directly with 5-0prolene. Superior vena cava clamped and divided at the Superior vena cava – right atrium junction. The right atrium end oversewn with 5-0 prolene in two layers. Right pulmonary artery opened by longitudinal incision. The cephalic end of Superior vena cava anastomosed end-side to the Right pulmonary artery using 7-0 prolene. Patient weaned off Cardiopulmonary bypass with supports of Dobutamine 5 μ/kg/min. Protamine given followed by decannulation. Epicardial pacing wires (2 atrial and 1 ventricular) placed. Hemostasis secured. Right pleura left open. Pericardium approximated over right atrium, right ventricle. Routine sternal closure over drains

His post-operative course was smooth.

He was ventilated with adequate analgesia and sedation for 7 hours and extubated on 0 POD to oxygen by mask. He had initial chest drainage (80 ml serosanguineous)

Post extubation chest x-ray revealed bilateral mild patchy atelectasis. This was managed with chest physiotherapy, nebulization and suctioning.

He was shifted to ward on 3rd POD. He was weaned from oxygen to air by 4th POD.

He was electively supported with dobutamine (0 – 3rd POD → 5mic/kg/min @ 2.2 ml/hr) in view of palliative surgery – Right Bidirectional Glenn Shunt and lactic acidosis (Lactate 2.86mmol/L).

Decongestive therapy was given in the form of lasix (boluses) and aldactone.

There were no post-operative arrhythmias.

Pacing wire was removed on 5th POD.

He had no fever or leucocytosis. His TLC was 11,480/cmm and platelets 1.64 lacs/cmm on 0 POD. All cultures till date are negative. Antibiotics were not required. He was clinically well and apyrexial all through. His predischarge TLC was 8,800/cmm and platelets were 2.79 lacs/cmm.

His pre-operative renal function showed (S. creatinine 0.40 mg/dl, Blood urea nitrogen 20 mg/dl)

His post-operative renal function showed (S. creatinine 0.26 mg/dl, Blood urea nitrogen 14 mg/dl) on 0 POD

His pre-discharge renal function showed (S. creatinine 0.24 mg/dl, Blood urea nitrogen 11 mg/dl)

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His pre-operative liver functions showed (SGOT/SGPT = 35/21 IU/L, S. bilirubin total 0.67 mg/dl, direct 0.20 mg/dl, Total protein 7.2 g/dl, S. Albumin 4.5 g/dl, S. Globulin 2.7 g/dl Alkaline phosphatase 429 U/L, S. Gamma Glutamyl Transferase (GGT) 16 U/L and LDH 394 U/L).

He had mildly deranged liver functions on 1st POD (SGOT/SGPT = 79/14 IU/L, S. bilirubin total 0.99 mg/dl & direct 0.31 mg/dl and S. Albumin 4.4 g/dl). This was managed with avoidance of hepatotoxic drug and continued preload optimization, inotropy and after load reduction. His liver function test gradually improved. His other organ parameters were normal all through.

His predischarge liver function test are SGOT/SGPT = 24/14 IU/L, S. bilirubin total 0.50 mg/dl, direct 0.16 mg/dl, Total protein 6.7 g/dl, S. Albumin 4.4 g/dl, S. Globulin 2.3 g/dl Alkaline phosphatase 226 U/L, S. Gamma Glutamyl Transferase (GGT) 13 U/L and LDH 514 U/L).

Intravenous heparin was given in the immediate post-operative period for anticoagulation. Tab. Colsprin was started on 1st POD for continued oral anticoagulation.

Thyroid function test done on 08/01/2024 which revealed T3 2.97 pg/ml (normal range – 2.15 – 5.83 pg/ml), T4 1.14 ng/dl (normal range 0.92 - 1.99 ng/dl), TSH 0.671 µIU/ml (normal range – 0.730 – 8.350 µIU/ml).

Gavage feeds were started on 0 POD. Oral feeds were commenced on 1st POD.

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MEDICATION:

1. Syp. Paracetamol 100 mg PO 6 hourly x one week
2. Tab. Pantoprazole 10 mg PO twice daily x one week
3. Syp. Lasix 5 mg PO twice daily till next review
4. Tab. Aldactone 6.25 mg PO twice daily till next review
5. **Tab. Colsprin 50 mg PO once with feed till next review - not to be stopped**
6. **(Dose of Colsprin to be increased (5mg/kg/day) according to weight gain upto maximum of 100mg once daily)**
7. **Syp. Shelcal 2.5 ml PO twice daily x 3 months**
8. **Nasoclear nasal drop 2 drop both nostril 4th hrly**
9. **Nebulization with normal saline 4th hrly**

- **All medications will be continued till next review except the medicines against which particular advice has been given.**

Review at FEHI, New Delhi after 6 – 9 months after telephonic appointment
In between Ongoing review with Pediatrician

Sutures to be removed on 22/01/2025; Till then wash below waist with free flowing water

4th hrly temperature charting - Bring own your thermometer

- **Frequent hand washing every 2 hours**
- **Daily bath after suture removal with soap and water from 23/01/2025**

Telephonic review with Dr. Parvathi Iyer (Mob. No. 9810640050) / Dr. K. S. IYER (Mob No. 9810025815) if any problems like fever, poor feeding, fast breathing

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(DR. KEERTHI AKKALA)
(ASSOCIATE CONSULTANT
PEDIATRIC CARDIAC SURGERY)

(DR. K.S. IYER)
(EXECUTIVE DIRECTOR
PEDIATRIC CARDIAC SURGERY)

Please confirm your appointment from (Direct 011-47134540, 47134541, 47134500/47134536)

- **Poonam Chawla Mob. No. 9891188872**
- **Treesa Abraham Mob. No. 9818158272**
- **Gulshan Sharma Mob. No. 9910844814**
- **To take appointment between 09:30 AM - 01:30 PM in the afternoon on working days**

OPD DAYS: MONDAY – FRIDAY 09:00 A.M

In case of fever, wound discharge, breathing difficulty, chest pain, bleeding from any site call 47134500/47134536/47134534/47134533

Patient is advised to come for review with the discharge summary. Patient is also advised to visit the referring doctor with the discharge summary.

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