Fortis Escorts
HEART INSTITUTE

Escorts Heart Institute and Research Centre Ltd.
Okhla Road, New Delhi - 110 025 (India)
Tel. : +91-11-4713 5000
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Website : www.fortishealthcare.com
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DISCHARGE SUMMARY

PATIENT NAME: BABY OF MADHU YADAV	**AGE: 24 DAYS, SEX: M**
REGN: NO: 16478524	**IPD NO: 223993/26/1201**
DATE OF ADMISSION: 23/09/2026	**DATE OF DISCHARGE: 05/10/2026**
CONSULTANT: DR. HIMANSHU PRATAP / DR. NEERAJ AWASTHY / DR. K. S. IYER	

DISCHARGE DIAGNOSIS

- **Cyanotic Congenital Heart Disease with increased pulmonary blood flow**
- **Obstructed Supra cardiac Total anomalous pulmonary venous connection**
- **Pulmonary Veins all 4 pulmonary veins forming confluence and draining into innominate vein via vertical vein coursing posterior to Left pulmonary artery**
- **Small fossa ovalis atrial septal defect**
- **Innominate vein mildly dilated**
- **Superior vena cava dilated**
- **Dilated right atrium and right ventricle**
- **Main pulmonary artery mildly dilated**

OPERATIVE PROCEDURE

Obstructed Supra cardiac Total anomalous pulmonary venous connection repair (Rerouting of pulmonary veins to left atrium through posterior approach) + Direct closure of atrial septal defect + Ligation of vertical vein done on 24/09/2026

RESUME OF HISTORY

Baby of Madhu Yadav is a 24 days old male infant (date of birth: 31/08/2026) from Ghazipur 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 3 kg. Maternal age is currently 24 years.

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He was apparently well till 10th day of life, when he had history of jaundice for which he was admitted in local Hospital. He had desaturation (SPO2 75-80%) and respiratory distress for which he was evaluated. During evaluation, cardiac murmur was detected. Echo was done which revealed Congenital heart disease – Total anomalous pulmonary venous connection. He was referred to Fortis Escorts Heart Institute, New Delhi for further management.

Now he is admitted at FEHI, New Delhi for further evaluation and management. On admission, his saturation was 86% on nasal CPAP, His Hb 15.6 g/dl, TLC was 11,610/cmm, platelets 2.54 lacs/cmm and Hematocrit 47.9% 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 3 kg, Height on admission 56 cm, Weight on discharge 3.43 kg

His Weight on admission 3 kg. (< 3rd Percentile); Z score -2 to – 3 SD

His blood Group A positive

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

He was admitted with diagnosis of complex cyanotic congenital heart disease with increased pulmonary blood flow, Supra cardiac Total anomalous pulmonary venous connection with small fossa ovalis atrial septal defect.

Venous blood gas was done which showed pH 7.361, pCO2 53mmHg, pAO2 28.3mmHg, BE 3.2mmol/L, Lactate acidosis (Lactate 4mmol/L) and bicarbonate 29.3mmol/L.

He was put on non-invasive CPAP ventilation through nasal prongs in view of resting tachypnea till surgery.

He was also stabilized with intravenous antibiotics (Piptazallin, Amikacin and Fluconazole), decongestive therapy along with intravenous fluids.

On 2nd day of life, he was taken up for high risk surgery after detailed counseling of family members regarding possibility of prolonged stay as well as uncertain long term issues.

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All blood and urine culture were sterile.

INVESTIGATION:

ECHO

Done on 23/09/2026 revealed situs solitus, levocardia, D-loop, AV-VA concordance, fossa ovalis atrial septal defect (4mm) right to left shunt, malaligned interatrial septum, supracardiac Total anomalous pulmonary venous connection (unobstructed) draining into left innominate vein, laminar inflow, trace tricuspid regurgitation max PG 30mmHg, intact interventricular septum, laminar outflow, trace pulmonary regurgitation max PG 14mmHg, left arch, tricuspid aortic valve, normal origin of coronaries, laminar flow in arch, confluent and adequate branch Pulmonary arteries, good flow in branch Pulmonary arteries, no Coarctation of aorta, no Patent ductus arteriosus, no left superior vena cava, normal LVEF, no collection, MV annulus 11.2mm

POST OP ECHO

Epicardial Echo done on 24/09/2026 revealed Laminar inflow, trace TR, Laminar flow from pulmonary venous confluence to LA. Laminar inflows, LVEF: 40-45 %

Done on 24/09/2026 (04:00 PM) revealed Laminar flow from pulmonary venous confluence to LA, laminar inflow, no residual atrial septal defect, trivial tricuspid regurgitation, no mitral regurgitation, laminar outflow, trace pulmonary regurgitation max Pg 10mmHg, LVEF 40%, no collection

Done on 25/09/2026 revealed Laminar flow from pulmonary venous confluence to LA, no residual shunt across interatrial septum, trivial tricuspid regurgitation, laminar outflow, trace pulmonary regurgitation max PG 8mmHg, LVEF 40%, no collection

Done on 29/09/2026 revealed Laminar flow from pulmonary venous confluence to LA, laminar flow in Superior vena cava, laminar inflow, trace tricuspid regurgitation max PG 28mmHg, no residual shunt across interatrial septum, laminar outflow, trace pulmonary regurgitation, max PG 15mmHg, LVEF 50%, no collection

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	Done on 03/10/2026 revealed Laminar flow from pulmonary venous confluence to LA, no residual interatrial septum, laminar inflow, trivial tricuspid regurgitation, laminar outflow, good flow in branch Pulmonary arteries, LVEF 50-55%, no collection
ABDOMINAL USG	Done on 24/09/2026 revealed Liver is normal in size, measures ~ 7.1cm in span and shows homogeneous normal echopattern. Hepatic veins & intrahepatic biliary radicles are not dilated. Portal vein is normal. • Gall bladder is contracted. • CBD is normal in course and caliber. • Spleen is normal in size & echogenicity (Span 3.6cm). • Pancreas appears normal in size & echogenicity. Rest of the retroperitoneum is obscured due to excessive bowel gases. • Both kidneys are normal in location, size, shape & echotexture. Cortical thickness & corticomedullary differentiation are well maintained. No dilatation of pelvicalyceal system seen. - Right kidney measures 4.7cm x 2.3cm. - Left kidney measures 5.1cm x 2.4cm. • Urinary bladder is empty.
USG BRAIN	Done on 24/09/2026 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)

Obstructed Supra cardiac Total anomalous pulmonary venous connection repair (Rerouting of pulmonary veins to left atrium through posterior approach) + Direct closure of atrial septal defect + Ligation of vertical vein done on 24/09/2026

REMARKS: Diagnosis: - Cyanotic Congenital Heart Disease with increased pulmonary blood flow, Supra cardiac Total anomalous pulmonary venous connection, small fossa ovalis atrial septal defect. Operation- Total anomalous pulmonary venous connection repair: Rerouting of pulmonary veins to left atrium through posterior approach, + Direct closure of atrial septal defect + Ligation of vertical vein. Operative Findings: - Situs Solitus, levocardia, AV and VA concordance, Pericardium normal, Thymus present, Innominate vein mildly dilated, Superior vena cava dilated, Inferior vena cava normal, Pulmonary Veins all 4 pulmonary veins forming confluence and draining into innominate vein via vertical vein coursing posterior to Left pulmonary artery, right atrium dilated, right ventricle dilated, Main pulmonary artery mildly dilated, soft, Branch Pulmonary arteries normal, Aorta normal, Coronaries normal, interatrial septum small fossa ovalis atrial septal defect, Patent ductus arteriosus small sized. Procedure- Routine induction of General Anaesthesia and placement of monitoring lines. Standard median sternotomy. Subtotal thymectomy done. Pericardial cradle created.

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Systemic heparinization (300 U/kg) and aorto-bicaval cannulation, on Cardiopulmonary bypass, and cooled to 34°C. Patent ductus arteriosus ligated. Right pleura opened widely. Minimal dissection done to locate the vertical vein, looped and snugged. Aorta cross-clamped and heart arrested with cold blood cardioplegia delivered antegrade through the aortic root, and topical ice-cold saline. Cavae snared. The left atrial appendage is retracted towards right with a purse-string suture at its tip. The pulmonary venous confluence is then opened horizontally in between stay sutures and the incision is extended on either side. The left atrial appendage is incised and the incision is extended up to the base. The pulmonary venous confluence is then anastomosed to LA with 7-0 prolene continuous suture. Heart flipped back to its normal position. Right atrium opened parallel to AV groove, atrial septal defect closed directly with 6-0 prolene. Right atrium closed with 6-0 prolene in double layers. Rewarming, deairing and cross-clamp removal done. Heart picked up in normal sinus rhythm. Epicardial pacing wires (2 atrial and 1 ventricular) placed. PD Catheter placed. Patient weaned off Cardiopulmonary bypass on 5 μ/kg/min Dobutamine. Hemostasis secured. Protamine given followed by decannulation. Vertical vein ligated with silk. Left pleurae open. Routine sternal closure over drains.

His post-operative course was associated with need for prolonged ventilation.

He was ventilated with adequate analgesia and sedation for 94.75 hours in view of Total anomalous pulmonary venous connection repair and significant puffiness.

He was extubated on 4th POD to oxygen by hood. Post extubation chest x-ray revealed bilateral mild patchy atelectasis with hazy lung fields. This was managed with chest physiotherapy, nebulization and suctioning.

He was shifted to ward on 5th POD. He was weaned from oxygen to air by 9th POD.

He was electively supported with dobutamine (0 – 6th POD → 5mic/kg/min @ 1 ml/hr) in view of Total anomalous pulmonary venous connection repair and lactic acidosis (Lactate 3.8mmol/L).

Decongestive therapy was given in the form of lasix (boluses & infusion), aldactone and drainage by intraoperatively sited peritoneal dialysis catheter till 5th POD. Dialysis was also commenced for significantly increased body water with diuretics resistance (1st – 2nd POD). 170 ml fluid was obtained per day.

There were no post-operative arrhythmias.

Pacing wire was removed on 9th POD.

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He had no fever but had mild leucopenia. His TLC was 3,830/cmm and platelets 1.33 lacs/cmm on 0 POD. His TLC was 6,510/cmm and platelets 1.59 lacs/cmm on 1st POD. He was thoroughly investigated for the same. This was managed with empiric broad spectrum antibiotics (Meropenem and Fluconazole) including anti staphyloccal cover (started on 1st POD) in view of sick state. The antibiotics were stopped once all cultures were sterile. He was clinically well later and apyrexial all through. His predischarge TLC was 13,990/cmm, platelets were 4.21 lacs/cmm and Hb 10.7 g/dl.

His pre-operative renal function showed (S. creatinine 0.57 mg/dl, Blood urea nitrogen 12 mg/dl)

His post-operative renal function showed (S. creatinine 0.36 mg/dl, Blood urea nitrogen 8 mg/dl) on 0 POD

His pre-discharge renal function showed (S. creatinine 0.24 mg/dl, Blood urea nitrogen 21 mg/dl)

His pre-operative liver functions showed (SGOT/SGPT = 45/16 IU/L, S. bilirubin total 12.15 mg/dl, direct 0.94 mg/dl, Total protein 4.6 g/dl, S. Albumin 3.4 g/dl, S. Globulin 1.2 g/dl Alkaline phosphatase 212 U/L, S. Gamma Glutamyl Transferase (GGT) 101 U/L and LDH 421 U/L).

He had mildly deranged liver functions on 1st POD (SGOT/SGPT = 91/23 IU/L, S. bilirubin total 8.67 mg/dl & direct 0.67 mg/dl and S. Albumin 3.7 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 = 21/13 IU/L, S. bilirubin total 0.37 mg/dl, direct 0.14 mg/dl, Total protein 4.2 g/dl, S. Albumin 2.6 g/dl, S. Globulin 1.6 g/dl Alkaline phosphatase 99 U/L, S. Gamma Glutamyl Transferase (GGT) 40 U/L and LDH 431 U/L).

Thyroid function test done on 24/09/2026 which revealed normal→ Thyroid function test showed T3 2.26 pg/ml (normal range – 1.95 – 6.04 pg/ml), T4 1.35 ng/dl (normal range 0.89 – 2.20 ng/dl), TSH 1.110 µIU/ml (normal range – 0.720 – 11.000 µIU/ml).

Repeat Thyroid function test done on 26/09/2026 which revealed normal→ Thyroid function test showed T3 2.30 pg/ml (normal range – 1.95 – 6.04 pg/ml), T4 1.61 ng/dl (normal range 0.89 – 2.20 ng/dl), TSH 1.740 µIU/ml (normal range – 0.720 – 11.000 µIU/ml).

Repeat Thyroid function test done on 03/10/2026 which revealed T3 1.65 pg/ml (normal range – 1.95 – 6.04 pg/ml), T4 1.88 ng/dl (normal range 0.89 – 2.20 ng/dl), TSH 0.617 µIU/ml (normal range – 0.720 – 11.000 µlU/ml) for which Tab. Thyroxine was started (12.5 mcg).

Minimal enteral feeds were started on 3rd POD and cautiously and gradually advanced to full feeds by 6th POD. Oral feeds were started on 9th POD.

He had loose motions from 9 - 10 POD which was managed with oral hydration.

CONDITION AT DISCHARGE

His general condition at the time of discharge was satisfactory. Incision line healed by primary union. No sternal instability. HR 130-140/min, normal sinus rhythm. Chest x-ray revealed bilateral clear lung fields. Saturation in air is 98-100%. **His predischarge x-ray done on 03/10/2026**

In view of congenital heart disease in this patient his mother is advised to undergo fetal echo at 18 weeks of gestation in future planned pregnancies.

Other future siblings are advised detailed cardiology review.

PLAN FOR CONTINUED CARE:

DIET : Breast feeds / Spoon feeds diet as advised

Normal vaccination (After 6 weeks from date of surgery)

ACTIVITY: Symptoms limited.

FOLLOW UP:

Long term cardiology follow- up in view of:-

1. **Obstructed supracardiac Total anomalous pulmonary venous connection repair**
2. **Possibility of re-obstruction at anastomotic site**

Review on 06/10/2026 in 5th floor at 09:30 AM for wound review

Repeat Echo after 3 - 4 months after telephonic appointment

Repeat Thyroid function test after 3 – 4 months

Repeat liver function test on 08/10/2026

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PROPHYLAXIS :

Infective endocarditis prophylaxis prior to any invasive procedure

MEDICATION:

1. Syp. Paracetamol 50 mg PO 6 hourly x one week
2. Tab. Pantoprazole 5 mg PO twice daily x one week
3. Tab. Fluconazole 40 mg PO once daily x one week
4. Syp. Lasix 5 mg PO twice daily till next review
5. Tab. Aldactone 3.125 mg PO twice daily till next review
6. Syp. Shelcal 2.5 ml PO twice daily x 3 months
7. **Tab. Thyroxine 12.5mcg PO once daily x 3 months and then repeat Thyroid function test (Empty Stomach)**
8. **Nasoclear nasal drop 2 drop both nostril 4th hrly**
9. **Nebulization with normal saline 4th hrly**
10. **Clotrimazole (Candid) mouth paint for local application**

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

Review at FEHI, New Delhi after 3 – 4 months after telephonic appointment
In between Ongoing review with Pediatrician

Sutures to be removed on 08/10/2026; Till then wash below waist with free flowing water

4th hrly temperature charting - Bring your own thermometer

- **Daily bath after suture removal with soap and water from 09/10/2026**

Telephonic review with Dr. Parvathi Iyer (Mob. No. 9810640050) / Dr. K. S. IYER (Mob No. 9810025815)

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(For)

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

(DR. HIMANSHU PRATAP)
(PRINCIPAL CONSULTANT
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, poor feeding, fast breathing, breathing difficulty, chest pain, wound discharge, 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.