

DISCHARGE SUMMARY

PATIENT NAME: PARIDHI GANGWAR	AGE: 11 YEARS, 3 MONTHS & 21 DAYS, SEX: F
REGN: NO: 14341956	IPD NO: 103290/26/1201
DATE OF ADMISSION: 11/05/2026	DATE OF DISCHARGE: 23/05/2026
CONSULTANT: DR. K. S. IYER / DR. NEERAJ AWASTHY	

DISCHARGE DIAGNOSIS

1. S/P Balloon pulmonary valvotomy on 18/08/2016 in AIIMS for

- Congenital heart disease
- Severe pulmonary stenosis

2. Now presented with

- Congenital Acyanotic Heart Disease
- Pulmonary stenosis
- Severe Right ventricular outflow tract obstruction
- Right atrium dilated, thick walled
- Right ventricle severely hypertrophied
- Aorta dilated

OPERATIVE PROCEDURE

Right ventricular outflow tract resection and augmentation with transannular patch (autologous pericardium) of Right ventricular outflow tract, pulmonary annulus and main pulmonary artery done on 12/05/2026

Right ventricular outflow tract took up to Hegar 20.

RESUME OF HISTORY

Paridhi Gangwar is a 11 years old /female child (date of birth: 21/01/2015) from Shahjahanpur, Uttar Pradesh who is a case of congenital heart disease. She is 1st in birth order and is a product of full term LSCS (lower segment caesarian section) delivery, born to 3rd gravida. Her birth weight was 3.4 kg. Maternal age is currently 40 years. Other two siblings are apparently well (2nd sibling 9 years old girl and 3rd sibling is 5 years old boy).

She was apparently well till 6 months of age, when during routine evaluation, cardiac murmur was detected. Echo was done which revealed Congenital heart disease. She was advised ballooning.

She was seen in AIIMS, Delhi. Echo was done which revealed Congenital heart disease – Tetralogy of Fallot physiology - Severe pulmonary stenosis.

She underwent Balloon pulmonary valvotomy on 18/08/2016 in AIIMS and was discharged on 19/08/2016. She was on regular follow up at AIIMS.

During follow up. Echo was done in 2024 in AIIMS which revealed Congenital heart disease – severe right ventricular outflow tract obstruction. She was advised surgical management but surgery was not done at that time.

She had history of increased fatiguability on exertion. She was seen by Dr. Neeraj Awasthy. Echo was done which revealed Congenital heart disease – severe right ventricular outflow tract obstruction. She was referred to Fortis Escorts Heart Institute, New Delhi for further management.

She was seen at FEHI, New Delhi on 24/01/2025. Her saturation at that time was 100% with weight of 32.5 Kg. Echo was done which revealed situs solitus, levocardia, D-loop, normal systemic and pulmonary venous drainage, AV-VA concordance, laminar inflow, mild tricuspid regurgitation max PG 130mmHg, mild mitral regurgitation, MV inflow max PG 6mmHg, mean PG 2mmHg, systolic anterior motion of mitral valve, Left ventricular outflow tract obstruction (dynamic) mean PG 10mmHg, flow acceleration at level of Right ventricular outflow tract infundibular and valvar, max PG 112mmHg, normal LVEF, RV hypertrophy, IVC normal size with respiration variation, TAPSE 19mm, TV TDI s; 13.3cm/sec, MV annulus 19.4mm (Z score -1.8), PA annulus 16mm (Exp 19mm), Right pulmonary artery 13mm, Left pulmonary artery 15mm (Exp 13mm), RVIDd 3cm (Z score +1.9), LVIDd 2.1cm (Z score -6.8), LVIDs 1.42cm (Z score -4.7), IVSd 1.4cm (Z score +3.79), PVPWd 0.7cm (Z score +1), FS 35%. She was advised surgical management

Now she is admitted at FEHI, New Delhi for further evaluation and management. On admission, her saturation was 100%, Her Hb 10.4g/dl, TLC was 7,840/cmm, platelets 1.70 lacs/cmm and Hematocrit 35.9% on admission.

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

Weight on admission 31.9 kg, Height on admission 138.5 cm, Weight on discharge 31 kg

BMI – 16.75 (15- 50th); Z score 0 to 2 SD

Her blood Group O positive

Child and her Mother SARS-COV-2 RNA was done which was negative.

All blood and urine culture were sterile.

INVESTIGATION:

ECHO

Done on 24/01/2026 revealed situs solitus, levocardia, D-loop, normal systemic and pulmonary venous drainage, AV-VA concordance, laminar inflow, mild tricuspid regurgitation max PG 130mmHg, mild mitral regurgitation, MV inflow max PG 6mmHg, mean PG 2mmHg, systolic anterior motion of mitral valve, Left ventricular outflow tract obstruction (dynamic) mean PG 10mmHg, flow acceleration at level of Right ventricular outflow tract infundibular and valvar, max PG 112mmHg, normal LVEF, RV hypertrophy, IVC normal size with respiration variation, TAPSE 19mm, TV TDI s; 13.3cm/sec, MV annulus 19.4mm (Z score -1.8), PA annulus 16mm (Exp 19mm), Right pulmonary artery 13mm, Left pulmonary artery 15mm (Exp 13mm), RVIDd 3cm (Z score +1.9), LVIDd 2.1cm (Z score -6.8), LVIDs 1.42cm (Z score -4.7), IVSd 1.4cm (Z score +3.79), PVPWd 0.7cm (Z score +1), FS 35%

Done on 04/05/2026 revealed normal segmental analysis, intact interatrial septum, laminar inflow, trace tricuspid regurgitation max PG 140mmHg, mild mitral regurgitation, flow acceleration across mitral valve mean PG 3mmHg, laminar LV outflow, intact interventricular septum, confluent and adequate branch Pulmonary arteries, flow acceleration in Right ventricular outflow tract at infundibular level Max PG 150mmHg, mild pulmonary regurgitation max PG 10mmHg, left arch, laminar flow in arch, normal LVEF, RV diastolic dysfunction, no collection, IVC 9.8mm (<50% variation with respiration), TAPSE 2.1cm, TV TDI s' 14.3cm/sec, e' 6.85cm/sec, a' 15.7cm/sec, RVFAC 30%, RVIDd 3cm, LVIDd 1.96cm, LVIDs 0.7cm, PA annulus 15mm (Exp 18mm)

POST OP ECHO

Epicardial Echo done on 12/05/2026 revealed Trace TR, laminar inflows, flow acceleration in well opened RVOT, max PG- 56mmHg, Free PR, LVEF 40-45 %

Done on 12/05/2026 (07:00 PM) revealed laminar inflow, trace TRR, laminar LV outflow, flow acceleration at Right ventricular outflow tract max PG 55mmHg, LVEF 45%, no collection

Done on 13/05/2026 revealed laminar inflow, trace tricuspid regurgitation, laminar LV outflow, flow acceleration at Right ventricular outflow tract max PG 100mmHg, LVEF 45-50%

Done on 14/05/2026 revealed laminar inflow, trace tricuspid regurgitation max PG 90mmHg, well opened Right ventricular outflow tract, dynamic flow acceleration max PG 70mmHg, good flow in branch Pulmonary arteries, RVFAC 30%, TAPSE 10mm, laminar aortic outflow, LVEF 45-50%, mild RV systolic and diastolic dysfunction, no collection, TV TDI s' 7.7cm/sec, e' 6.14cm/sec, e' 7.60cm/sec

Done on 19/05/2026 revealed laminar inflow, trace tricuspid regurgitation max PG 38mmHg, well opened Right ventricular outflow tract, dynamic flow acceleration max PG 44mmHG, good flow in branch Pulmonary arteries, laminar aortic outflow, LVEF 45-50%, no collection, TV TDI s' 7.9cm/sec, e' 7.99cm/sec, a' 6.87cm, TAPSE 13.2mm, RVFAC 50%

Done on 22/05/2026 revealed laminar inflow, trivial tricuspid regurgitation, trace mitral regurgitation, laminar LV outflow, well opened Right ventricular outflow tract with good bolus of flow max PG 23mmHg, good flow in branch Pulmonary arteries, laminar flow across arch, LVEF 50%, trace pericardial collection, no pleural collection

Done on 23/05/2026 revealed laminar inflow and outflow, well opened Right ventricular outflow tract with good flow max PG 56mmHg, good flow in branch Pulmonary arteries, trace pericardial collection

ABDOMINAL USG Done on 11/05/2026 revealed Liver shows homogeneous normal echopattern. Hepatic veins appear prominent. Intrahepatic biliary radicles not dilated. Portal vein measures 6mm in diameter (normal). • Gall bladder is partially distended (Post prandial). • CBD is not dilated. • Pancreas appears normal in size & echogenicity. • Spleen is normal in size & echogenicity (Span – 8.7cm). • 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 – 8.6cm x 4.1cm. Left kidney measures – 8.4cm x 4.1cm. • Urinary bladder is partially filled. No calculus. • Minimal fluid noted in pelvis.

CHEST ULTRASOUND Done on 15/05/2026 revealed Minimal left pleural effusion

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

Infundibular resection + Right ventricular outflow tract, pulmonary annulus and main pulmonary artery augmentation with transannular patch of autologous pericardium patch done on 12/05/2026

Right ventricular outflow tract took up to Hegar 20.

REMARKS: Diagnosis: - Congenital Acyanotic Heart Disease, Pulmonary stenosis with severe Right ventricular outflow tract obstruction. Operation: Right ventricular outflow tract resection and augmentation of Right ventricular outflow tract by transannular pericardial patch. Operative Findings: - Situs solitus, levocardia {S, D, S}, AV concordance, Pericardium normal, Innominate normal, Superior vena cava normal, Inferior vena cava normal, Pulmonary Veins normal, right atrium dilated, thick walled, right ventricle severely hypertrophied, Main pulmonary artery normal, confluent branches, Left pulmonary artery normal, Right pulmonary artery normal, Aorta dilated,

Right ventricular outflow tract severe infundibular stenosis, with fibrous OS infundibuli, pulmonary valve stenosed, thick fibrosed leaflets with rolled up margins, severe commissural fusion and tethering of valve. Procedure:- Routine induction of General Anaesthesia and placement of monitoring lines. Median sternotomy. Thymus partially excised. Pericardial cradle created. Aorta, Main pulmonary artery, branch Pulmonary arteries dissected. Systemic heparinization (400 U/kg). On aorto-bicaval cannulation, went on Cardiopulmonary bypass. Cooled to 34°C. right atrium opened, Right ventricular outflow tract inspected, severe Right ventricular outflow tract obstruction pulmonary valve not accessible through right atrium. Main pulmonary artery opened in between stays and Main pulmonary artery incision extended proximally across stenotic valve into Right ventricular outflow tract and distally upto bifurcation. Right ventricular outflow tract took up to Hegar 20. Ledge at the origin of Right pulmonary artery excised. Right ventricular outflow tract, pulmonary annulus and Main pulmonary artery augmented with transannular patch of autologous pericardium using 5-0 and 4-0 prolene. Left side deaired, patent foramen ovale closed, right atrium closed in 2 layers. Epicardial pacing wires (2 atrial and 1 ventricular) placed. Weaned off Cardiopulmonary bypass with 0.1 mcg/kg/min Norepinephrine. Hemostasis secured. Protamine given followed by decannulation. Pericardium approximated over Aorta. Left pleurae intact. Routine sternal closure over drains.

Her post-operative course was associated with significant endotracheal bleeding needing prolonged ventilation and diagnostic cath to rule out collateral.

She was ventilated with adequate analgesia, sedation and muscle relaxation for 164.75 hours in view of transannular Right ventricular outflow tract patch augmentation, significant endotracheal bleeding and fluctuating mean arterial pressures,

Due to significant endotracheal bleeding, on 3rd POD, she was shifted to cath lab for look for collaterals. There was no significant collateral found.

She was finally extubated on 7th POD. Following extubation she was supported with BIPAP in view of resting tachypnoea till 8th POD. Post extubation chest x-ray revealed bilateral mild patchy atelectasis with hazy lung fields. This was managed with chest physiotherapy, nebulization and suctioning.

She was shifted to ward on 9th POD. She was weaned from oxygen to air by 10th POD.

She was also started with Norepinephrine intraoperatively (0 – 8th POD → (2/50) 0.1mic/kg/min @ 4.8ml/hr and decreased to (4/50) 0.15 mic/kg/min @ 3.6ml/hr) for intraoperative systemic hypotension (MAP 54mmHg)

She was also started with Epinephrine late 0 POD (0 – 4th POD → 0.05mic/kg/min @ 1.2ml/hr and increased to 0.1 mic/kg/min @ 2.4ml/hr) for systemic hypotension (MAP 54 mmHg)

She also received inj. hydrocortisone from 0 POD in view of vasopressor resistance hypotension (MAP 54mmHg).

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

Pacing wire was removed on 10th POD.

She had intermittent fever (upto 38.7°C) on 2nd – 4th POD. She was thoroughly investigated for the same. On evaluation she had leucocytosis with thrombocytopenia. Her TLC was 20,790/cmm and platelets 1.00 lacs/cmm on 1st POD. Her TLC was 16,660/cmm and platelets 0.80 lacs/cmm on 2nd POD. Her TLC was 14,140/cmm and platelets 0.74 lacs/cmm on 3rd POD.

This was managed with empiric broad spectrum antibiotics (Meropenem and Fluconazole) including anti staphylococcal cover (started on 1st POD). The antibiotics were stopped once all cultures were sterile. She was clinically well and afebrile later. Her pre-discharge TLC was 12,280/cmm, platelets were 1.34 lacs/cmm and Hb 11.5 g/dl.

Her pre-operative renal function showed (S. creatinine 0.42 mg/dl, Blood urea nitrogen 12 mg/dl)

Her post-operative renal function showed (S. creatinine 0.69 mg/dl, Blood urea nitrogen 14 mg/dl) on 2nd POD

Her pre-discharge renal function showed (S. creatinine 0.51 mg/dl, Blood urea nitrogen 33 mg/dl)

Her pre-operative liver functions showed (SGOT/SGPT = 23/16 IU/L, S. bilirubin total 0.58 mg/dl, direct 0.19 mg/dl, Total protein 6.9 g/dl, S. Albumin 4.5 g/dl, S. Globulin 2.4 g/dl Alkaline phosphatase 274 U/L, S. Gamma Glutamyl Transferase (GGT) 12 U/L and LDH 198 U/L).

She had mildly deranged liver functions on 1st POD (SGOT/SGPT = 101/28 IU/L, S. bilirubin total 2.27 mg/dl & direct 0.81 mg/dl and S. Albumin 3.7 g/dl) and repeat (SGOT/SGPT = 112/26 IU/L, S. bilirubin total 1.92 mg/dl & direct 0.61 mg/dl and S. Albumin 3.6 g/dl).

On 2nd POD (SGOT/SGPT = 91/27 IU/L, S. bilirubin total 1.98 mg/dl & direct 0.31 mg/dl and S. Albumin 3.7 g/dl) and repeat (SGOT/SGPT = 112/26 IU/L, S. bilirubin total 1.97 mg/dl & direct 0.66 mg/dl and S. Albumin 3.6 g/dl).

This was managed with avoidance of hepatotoxic drug and continued preload optimization, inotropy and after load reduction. Her liver function test gradually improved. Her other organ parameters were normal all through.

Her predischarge liver function test are SGOT/SGPT = 32/34 IU/L, S. bilirubin total 1.62 mg/dl, direct 0.84 mg/dl, Total protein 7 g/dl, S. Albumin 4.1 g/dl, S. Globulin 2.9 g/dl Alkaline phosphatase 101 U/L, S. Gamma Glutamyl Transferase (GGT) 109 U/L and LDH 446 U/L).

Thyroid function test done on 12/05/2026 which revealed T3 3.71 pg/ml (normal range – 2.56 – 5.01 pg/ml), T4 1.77 ng/dl (normal range 0.98 - 1.63 ng/dl), TSH 4.520 μ IU/ml (normal range – 0.510 – 4.300 μ IU/ml) for which Tab. Thyroxin was started.

Repeat Thyroid function test done on 15/05/2026 which revealed T3 1.65 pg/ml (normal range – 2.56 – 5.01 pg/ml), T4 1.09 ng/dl (normal range 0.98 - 1.63 ng/dl), TSH 5.240 μ IU/ml (normal range – 0.510 – 4.300 μ IU/ml) for which Tab. Thyroxin was increased to 25 mcg.

Repeat Thyroid function test done on 20/05/2026 which revealed T3 1.02 pg/ml (normal range – 2.56 – 5.01 pg/ml), T4 1.14 ng/dl (normal range 0.98 - 1.63 ng/dl), TSH 2.570 μ IU/ml (normal range – 0.510 – 4.300 μ IU/ml) for which Tab. Thyroxin was increased to 37.5 mcg.

Gavage feeds were started on 2nd POD. Feeds were interrupted during cardiac catheterization. Feeds were re-started on 4th POD. Oral Feeds were started on 8th POD.

CONDITION AT DISCHARGE

Her general condition at the time of discharge was satisfactory. Incision line healed by primary union. No sternal instability. HR 80-90-/min, normal sinus rhythm. Chest x-ray revealed bilateral clear lung fields. Saturation in air is 95-100%. **Her predischarge x-ray done on 22/05/2026**

In view of advanced maternal age, mother is advised not to have any more pregnancies.

Other siblings are advised detailed cardiology review.

PLAN FOR CONTINUED CARE:

DIET : Fluid restricted 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. Possibility of recurrence of Right ventricular outflow tract obstruction

Review on 26/05/2026 in 5th floor at 09:30 AM for wound review

Repeat Echo after 3 - 6 months after telephonic appointment

PROPHYLAXIS :

Infective endocarditis prophylaxis prior to any invasive procedure

MEDICATION:

1. Tab. Paracetamol 500 mg PO 6 hourly x one week
 2. Tab. Pantoprazole 40 mg PO twice daily x one week
 3. Tab. Fluconazole 200 mg PO once daily x one week
 4. Syp. Lasix 10 mg PO twice daily till next review
 5. Tab. Aldactone 7.5 mg PO twice daily till next review
 6. Tab. Shelcal 500 mg PO twice daily x 3 months
 7. Tab. Thyroxine 37.5mcg 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
- All medications will be continued till next review except the medicines against which particular advice has been given.

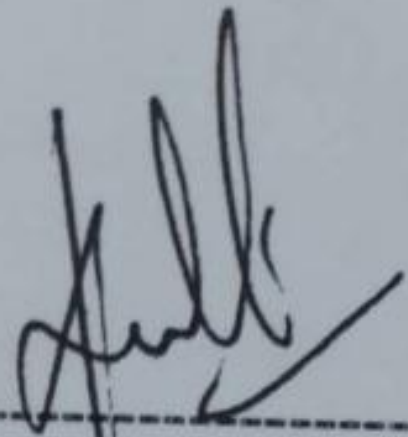
Review at FEHI, New Delhi after 3 – 6 months after telephonic appointment
In between Ongoing review with Pediatrician

Sutures to be removed on 26/05/2026; Till then wash below waist with free flowing water

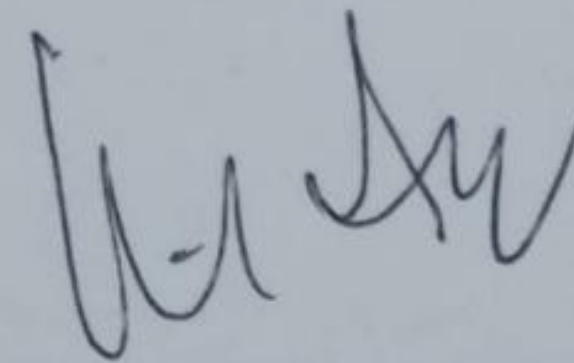
4th hrly temperature charting - Bring your own thermometer

➤ Daily bath after suture removal with soap and water from 27/05/2026

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



(DR. KEERTHI AKKALA)
(ASSOCIATE CONSULTANT
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(DR. K.S. IYER)
(CHAIRMAN
PEDIATRIC & CONGENITAL HEART 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.