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VENTRICULAR SEPTAL DEFECT:WHAT YOU ALWAYS WANTED TO KNOW

HOW DO CARDIOLOGISTS MAKE DECISION ABOUT WHEN TO OPERATE ON A CHILD WITH VSD:

Small VSDs: (Neither Pressure Overload nor Volume Overload)

i. Are operated only if the child has Aortic Insufficiency OR
ii. An episode of Infective Endocarditis: therefore the need to advise dental hygiene to prevent IE

Large VSDs: BY 3-4 MONTHS AGE IF (Volume & pressure overload)

i. If pulmonary pressures are high (be it from increased flow)
ii. OR if the child fails to gain weight /falls off the weight curve

Moderate VSDs: (No pressure overload but volume overload)

i. On maximum afterload reduction if child still having Failure to Thrive
ii. OR Having recurrent infections on medical management

WEIGHT AND MANAGEMENT OF VSD

LARGE VSDs

- IF SURGERY IS NEEDED: WEIGHT IS IN CURRENT PRACTISE IS NO CRITERIA FOR OPERATION-one does not have to wait for the child to be certain weight prior to surgery
- So, large VSD pts: **waiting for weight to be 5 kg prior to surgery is a practise of the past**
- Decision to operate is made on the basis of criteria mentioned above

MODERATE VSD

- These patients are not in a rush for surgery due to normal PA pressures. But their main complaint is **Failure to thrive**
- **Calorie dense** nutrition is the key to helping these children gain weight
  - **In First 6 Months:**
    - Early introduction of weaning foods-even at 4-5 months
    - If on top feeds: Increasing the ratio of powder to water (e.g.1.25 scoops to 1 oz of water)
  - **6-12 months**
    - If one is really facing the challenge of weight gain (e.g. 5 kg at 7 months in a child w VSD w/out pulm Htn) **avoid the following:** Juices, biscuits, dal paani.

- **Emphasize on weaning foods with high volume/calorie ratio:** khichri with butter/ghee (yes), sujee kheer, halwa, cerelac (if used) with higher powder/water ratio; cerelac even in milk; boiled potato with butter.

REMEMBER VSDs DON'T INCREASE IN SIZE, BUT THE CHILD GROWS AS HE GAINS WEIGHT THERE BY CRITICALLY ALTERING THE VSD SIZE TO BODY SURFACE AREA RATIO AS THE CHILD GAINS WEIGHT

VSD CLINICAL CASE SCENARIO

A 3 month old child with a pansystolic murmur presents to the cardiology OPD. The childs height is on the 75th Centile but the weight is on the 10th Centile. The child sweats while feeding. Weight gain in the last 3 months is a kilo only. Child does not stop while feeding nor has he got shortness of breath.
Echocardiogram shows a VSD in perimembranous location. The gradient across the VSD is 76mmHg. The LA, LV are mildly dilated.
The blood pressure of the child is 100/65mmHg.

What type of VSD does the child have:

- □ **Small VSD**
- □ **Moderate VSD**
- □ **Large VSD**

Does the child have

- □ **Pressure Overload Only**
- □ **Volume Overload Only**
- □ **Volume & Pressure overload**

What is the Pulmonary Pressure in this patient:

- □ **100 mmHg**
- □ **24 mmHg**
- □ **76 mmHg**

What treatment would be advised to the child ?

- □ **Digoxin**
- □ **Enalapril for afterload reductn**
- □ **Diuretics**
- □ **Diuretics and Afterload reducers**
- □ **Dig, Diuretics & Envas**

Medical management results in weight gain. The child in 2 more months has gained weight and at 5 months the weight also approaches 50th Centile. Subsequently the medicines are gradually decreased and weight gain continues.(The correct answer for all questions above is 2nd option in each).

If the child had not gained weight appropriately after the medical management, you would have advised

- □**Further increase in medicines dose**
- □ **Additional calorie density in diet**
- □ **Make Family aware that surgery would be needed**
- □ **All of the above**

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