

Essential paediatrics



Ask Doctor Clarke

Course book sample

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Essential Paediatrics

Programme

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Important Note

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Paediatric Cardiology: Quiz

Question 1

Down syndrome: what abnormalities are shown in this picture?
What cardiac abnormalities are typically associated?



V Miles: with permission

Question 2

What features would suggest that a murmur is innocent?

Question 3

What are the physical signs of a small VSD?

Question 4

What are the four components of Fallot's tetralogy?



Samantha Ireland @123f

Introduction

Course aims

- Cover the essentials of paediatrics in a single day
- Focus on areas popular in exams
- Make sense of areas that most people find difficult
- Quizzes and question stops
- Opportunities for questions during breaks
- **Buzz words**

Memory aids

- Deep understanding plus
- Repetition, songs, poems, mnemonics
- For example: pyloric stenosis buzz words:
hypokalaemic, hypochloraemic metabolic alkalosis



Bronchiolitis poem

In kids under one, there's a common disease
 With cough, snotty nose, crackles and wheeze
 Always record the respiratory rate
 If it's severe, they'll desaturate

Signs of shock: "I SHOCKS"

- I Increased respiratory rate
- S sinus tachycardia
- H hypotension
- O oliguria
- C cold
- K klammy
- S slow capillary refill

Normal respiratory and heart rates for children (APLS 2016)

Age	Respiratory rate	Heart rate
Less than 1 year	30 – 40	110 – 160
1 – 2 years	25 – 35	100 – 150
2 – 5 years	25 – 30	95 – 140
5 – 12 years	20 – 25	80 – 120
>12 years	15 – 20	60 – 100

Clinical exams: student report

"My case was a 6 year old boy with a VSD. I found this quite challenging and the little boy was very sweet but wanted to tell me all about his problem so I couldn't go through my usual routine with his mother with the history but it didn't seem to matter as I passed anyway. I think it's more about having a good rapport with the child and being child friendly!"

History taking: don't forget

- To talk to the child as well as the parent
- Birth history and developmental history
- Social history
- Family history



Examination

- Examination starts from the moment you walk into the room
- Observation while taking the history gives lots of information about a child's clinical condition

Top tips

- Leave the child on the parent's knee if that is where they are most comfortable
- Always explain what you are going to do
- Use one of the parents as a "dummy" eg listen to the parent's heart first
- Be systematic, yet opportunistic i.e auscultate before they start crying, look into the throat when they're screaming!
- Examiners will understand if a child has been difficult to examine

Paediatric Cardiology

Paediatric cardiology

- Examination of the cardiovascular system
- Acyanotic congenital heart disease: ventricular septal defect, atrial septal defect and patent ductus arteriosus
- Cyanotic congenital heart disease: Fallot's tetralogy, transposition of the great arteries
- Down syndrome and the heart

Examination of the Cardiovascular System

Approach to examination

- Wash hands, introduce yourself and ask permission
- Look: scars, clubbing, oxygen, breathlessness, cyanosis, respiratory rate, activity, JVP
- Feel: pulses, praecordium, liver
- Listen: heart, lung bases
- Finally thank child and parents and wash hands



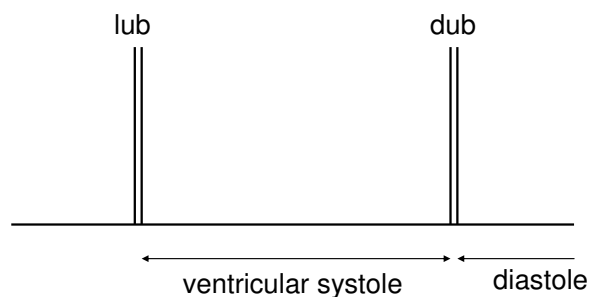
Please note

- It is reasonable to perform auscultation first while the child is quiet
- "Babies don't have a neck" so check for enlargement of liver instead of assessing the JVP

Auscultation: question stop

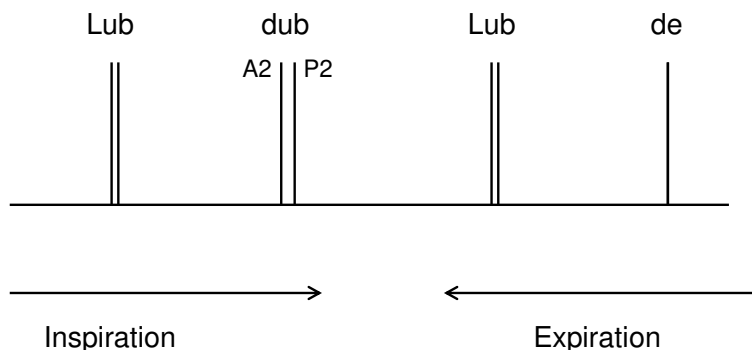
What causes the first and second heart sounds?

Normal heart sounds

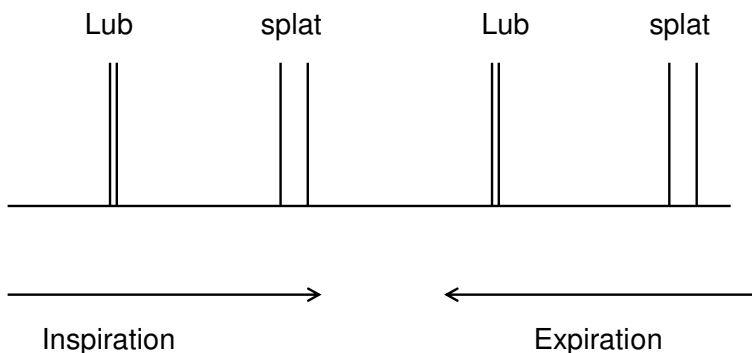


Normal splitting of the second heart sound

- During inspiration, there is an increase in the negative intra-thoracic pressure
- This increases venous return from the body into the right atrium
- And therefore increases the volume of blood to be ejected by the right ventricle
- Causing a slight delay in the closure of the pulmonary valve (P2)



Wide fixed splitting of the second heart sound with an atrial septal defect (ASD)



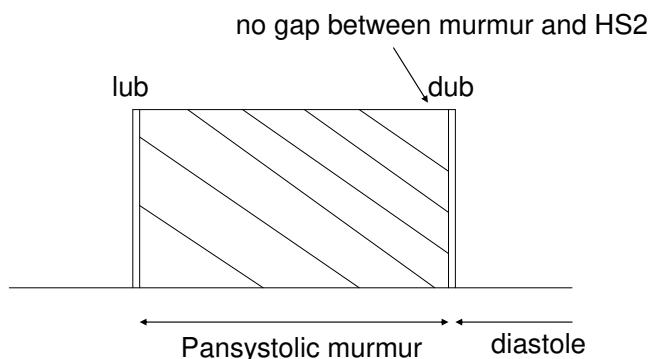
Splitting of the second sound in atrial septal defect

- **Wide:** due to **shunting**, with increase flow to right side of heart, delaying closure of pulmonary valve
- **Fixed:** no variation with respiration because of **“common atrium”**. (Due to the defect, changes with respiration affect both sides of the heart equally)

Please note

- You are not expected to diagnose wide fixed splitting of the second sound
- It is a subtle sign and many paediatricians have never heard it
- This is why it is much harder to diagnose ASDs compared with VSDs
- But it is still useful to be aware of this sign as it is often asked about in exams

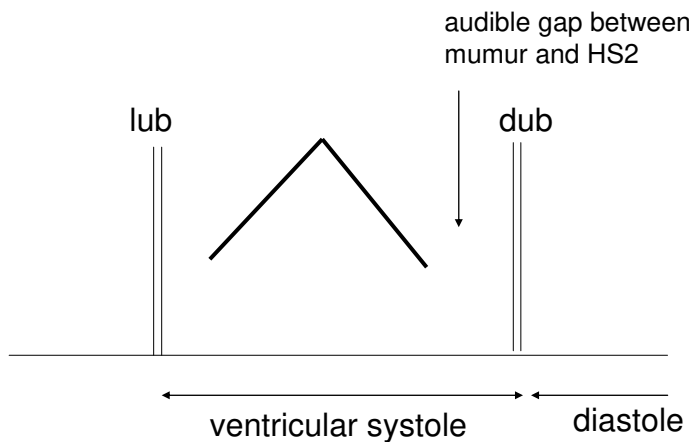
Pansystolic murmur: “burr”



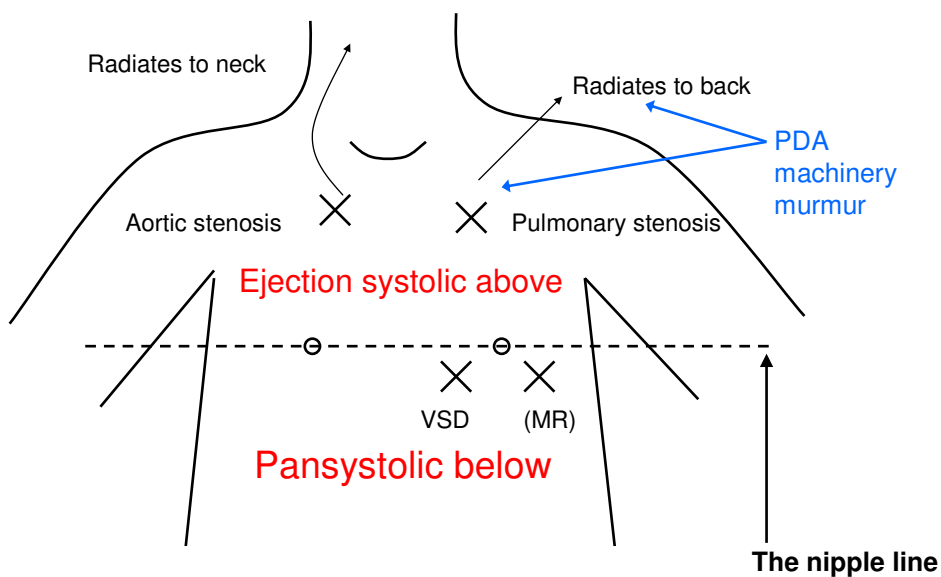
Differential diagnosis of a pansystolic murmur

- Ventricular septal defect (at lower left sternal edge, often with a thrill)
- Mitral regurgitation (loudest at apex and radiates to axilla)
- Tricuspid regurgitation (with pulsatile hepatomegaly and V waves in JVP)

Ejection systolic murmur: “burr de”



Murmurs: above or below the nipple line?



Continuous murmur: BurrDurr

