



## **European Board of Paediatric Surgery Part 1**

# **20 Sample Questions Answers and Comments**

© 2017 Copyright European Board of Paediatric Surgery

Edition 1.1 - December 2017

Compilation and Comments

by Oliver Muensterer (EBPS Question master)

This is a downloadable individual copy only.

Copying, scanning or sharing with third parties is prohibited.

**Q1. Correct answer: D**

Comment: The contrast CT scan shows a splenic laceration (arrow). The liver is intact, the kidneys and the pancreas are not depicted. The shoulder pain most likely is referred pain from the splenic laceration.



**Q2. Correct answer: E**

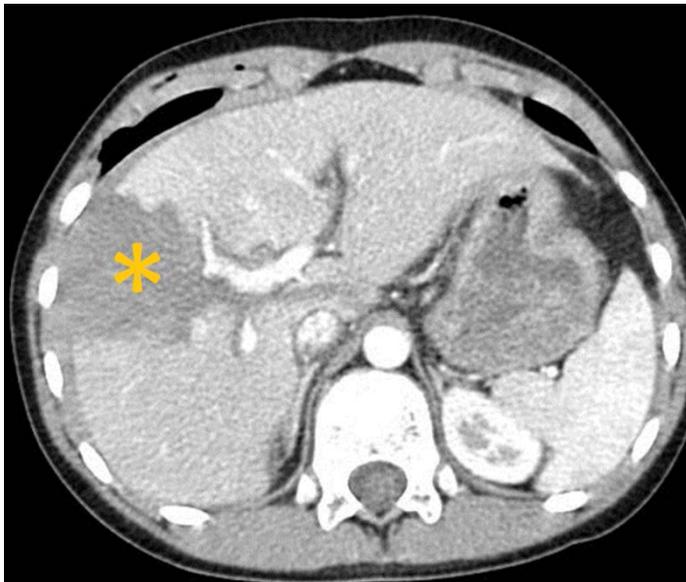
Comment: Epigastric hernias are small defects in the linea alba between the recti muscles. They usually contain only preperitoneal fat. Richter's hernia is the protrusion of a part of the antimesenteric bowel through an abdominal wall defect. Diastasis recti is the separation of the recti. I usually resolves with time and growth.

**Q3. Correct answer: B**

Comment: Aplasia cutis congenita is a rare defect of the scalp mostly localized in the occipital vertex area. The image shows the typical presentation. A myelomeningocele is localized along the spinal cord (myelon), not the head (when it is called an encephalocele). A fungal infection that leads to loss of the epidermis would be unlikely; Birth trauma can lead to a caput succedaneum, a cephalhaematoma, or direct laceration (usually smaller than the lesion seen).

**Q4. Correct answer: D**

Comment: The patient has a large liver laceration (\*) without a contrast blush. His hemoglobin is still acceptable, and most of these patients can be managed nonoperatively. At this time, giving a bolus of Normal Saline and evaluate if the vital signs normalize is all that is necessary. Since there is no contrast blush, angiography is unlikely to be helpful acutely.



**Q5. Correct answer: C**

Comment: The film shows the typical configuration of a "double bubble" consistent with duodenal atresia. While most of these children have bilious gastric drainage, some do not if the point of obstruction is proximal to the papilla (as in this case). Hypertrophic pyloric stenosis presents later in life with gastric but not duodenal distension. Meconium ileus is an obstruction much further downstream, leading to multiple dilated bowel loops. Jejunal atresia has a triple or quadruple bubble configuration on plain film radiograph, depending on where the atresia is located.

**Q6. Correct answer: C**

Comment: The child has a typical left posterolateral (Bochdalek) diaphragmatic hernia with the stomach (nasogastric tube) and part of the bowel in the left chest. Because of this, the heart is shifted to the right, but this is not dextrocardia. A Morgagni diaphragmatic hernia is anterior and usually less symptomatic. There is no sign of tension pneumothorax on this radiograph.

**Q7. Correct answer: D**

Comment: Meningococemia can often lead to gangrene via septic embolization. This happened in this child. There is no history for Frostbite in the vignette. Progressive hydrocephalus or intraventricular hemorrhage do not cause discoloration of the fingertips. Raynaud's syndrome is a medical condition involving arterial spasm with typically white, then blue discoloration of the fingers or toes. It most often occurs after the early teenager years and is more frequent in girls.

**Q8. Correct answer: E**

Comment: The lesion seen here is a typical haemangioma. While some criteria for regression are visible, such as the greyish central color, it is still in a critical location. The visual axis is still preserved, but every effort should be taken to induce regression. This is most easily achieved by oral propranolol. Excision in the eyelid would be technically challenging and probably leave a permanent scar with functional impairment. The lesion can be watched, but follow up should be scheduled sooner than in 2 months in case it continues to grow. Systemic  $\alpha$ -Interferon used to be used for complex haemangioma treatment, but was abandoned because of severe neurodevelopmental sequelae.

**Q9. Correct answer: B**

Comment: There image shows a feeding tube curled up in pouch of the upper esophagus There is air below the diaphragm. This constellation is most consistent with esophageal atresia with distal fistula. There would be no air in the stomach in pure esophageal atresia. Lobar emphysema presents with overinflation of one or more lobes of the lung. It is more common in males and in the left upper lobe. Esophageal duplication presents with a fluid-filled cyst adjacent to the esophagus. One would expect subcutaneous emphysema with pharyngeal perforation.

**Q10. Correct answer: D**

Comment: The changes seen at the distal femur are most consistent with Osteosarcoma. The localization is typical. One can see spiculae and the so-called "sunburst appearance" of the aggressive secondary periostitis of this disease. There are some calcifications of the surrounding soft tissue, indicating local spread.

**Q11. Correct answer: B**

Comment: The ductus venosus is a prenatal connection between the umbilical vein and the vena cava delivering oxygenated blood from the placenta to the heart of the fetus. The ductus arteriosus is a connection between the pulmonary artery and the aorta through which blood pumped out by the right ventricle shunts to the systemic circulation. The foramen ovale is open during intrauterine life to allow oxygenated blood to pass from the right to the left atrium. The omphalomesenteric duct connects the yolk sac to the intestine, and the urachus is a remnant of the allantois that connects the bladder to the umbilical stalk.

**Q12. Correct answer: B**

Comment: The triad of irregular respirations, bradycardia and hypertension is called Cushing's triad and is a response to increased intracranial pressure. It is a sign of imminent brain stem herniation and must be recognized promptly. Named after the famous American Neurosurgeon Harvey Williams Cushing (1869-1939).

Reference: <http://www.whonamedit.com/synd.cfm/981.html>

**Q13. Correct answer: E**

Comment: The most important prognostic factor for favorable outcome in hepatoblastoma is complete (R0) resection. Other prognostic factors include PRETEXT score, AFP level, portal vein involvement, presence of metastasis, age, stage, and histology.

References: NIH-National Cancer Institute: Childhood Liver Cancer Treatment (PDQ)-Health Professional Version. Available at [https://www.cancer.gov/types/liver/hp/child-liver-treatment-pdq#section/\\_567](https://www.cancer.gov/types/liver/hp/child-liver-treatment-pdq#section/_567)

**Q14. Correct answer: E**

Hypertrophic pyloric stenosis demonstrates an increased risk in families with affected individuals. Penetrance is greater in males. Therefore, if a mother presented with the condition in infancy, her sons are more likely to have the disease than if the father was affected.

**Q15. Correct answer: A**

In this patient, the gastrostomy has somehow migrated from the lumen of the stomach into the abdominal cavity. This is a potentially life-threatening situation that requires surgical revision. Replacing the gastrostomy will only replace the gastrostomy into the peritoneum. Increasing the inflation volume will not help. Nasogastric decompression alone may be an initial way to decompress the stomach, but will not solve the underlying problem. It is a good idea to place the patient on broad spectrum antibiotics to avoid peritonitis, but this alone will not resolve the problem.

**Q16. Correct answer: E**

Comment: Longterm neurologic impairment in patients with congenital diaphragmatic hernia after ECMO treatment has been found to be 10%-30% across several large studies. Interestingly, longterm respiratory problems are infrequent, but gastroesophageal reflux requiring some form treatment is very common in these patients (>50% with esophagitis) and contributes markedly to longterm morbidity.

Reference: Peetsold MG et al. The long-term follow-up of patients with a congenital diaphragmatic hernia: a broad spectrum of morbidity. *Ped Surg Int* 2009;25:1-17

**Q17. Correct answer: D**

Comment: The tumour markers serum  $\alpha$ -fetoprotein (AFP) and/or  $\beta$ -HCG are elevated in typical extragonadal nonseminomatous germ cell tumors. These tumor markers provide diagnostic, staging, and prognostic information. VMA/HVA are typically increased in neuroblastomas. AMG is associated with certain lymphomas. Increased Myc-N (or N-Myc) amplification is a poor prognostic factor in neuroblastomas, and LDH is unspecifically increased in tumours with a high cell turnover.

**Q18. Correct answer: D**

Comment: Urachal remnants typically present in infancy with persistent umbilical drainage that does not improve after attempts of cauterisation. While urachal cysts can become infected, urinary tract infections are rare. In one review (Copp 2009) of 29 patients, the presenting symptoms were umbilical discharge without omphalitis in 13, omphalitis without umbilical discharge in 7, and umbilical discharge with omphalitis in 3. Only 1 patient presented with urinary tract infection.

Reference: Copp HL et al. Clinical presentation and urachal remnant pathology: implications for treatment. J Urol 2009;182:1921-4

**Q19. Correct answer: C**

Comment: According to a systematic review (Husmann 2009), the risk of bladder cancer is 7-8 fold higher after ileal or colonic augmentations and 14-15 fold higher for gastric augmentation over standard norms.

Reference: Husmann DA. Malignancy after gastrointestinal augmentation in childhood. Ther Adv Urol. 2009;1:5-11

**Q20. Correct answer: D**

Comment: Mortality is the rate of death, and morbidity is the rate of illness in a specific population or group.