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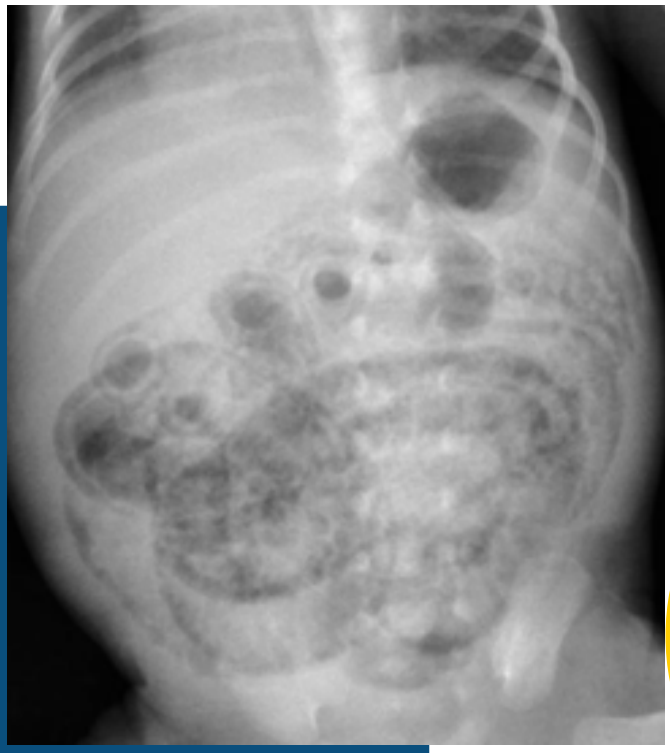
PAEDIATRIC EDUCATION NEWSLETTER

Welcome to the Paediatric Education Newsletter, a monthly education bulletin highlighting learning points from departmental teaching, interesting clinical cases and questions. We hope you find the PEN useful, we'd love to hear from you particularly if there is anything you would like to contribute! The PEN Team (Henry, Aidan and Hana)

X-RAY FINDINGS IN NECROTISING ENTEROCOLITIS (NEC)

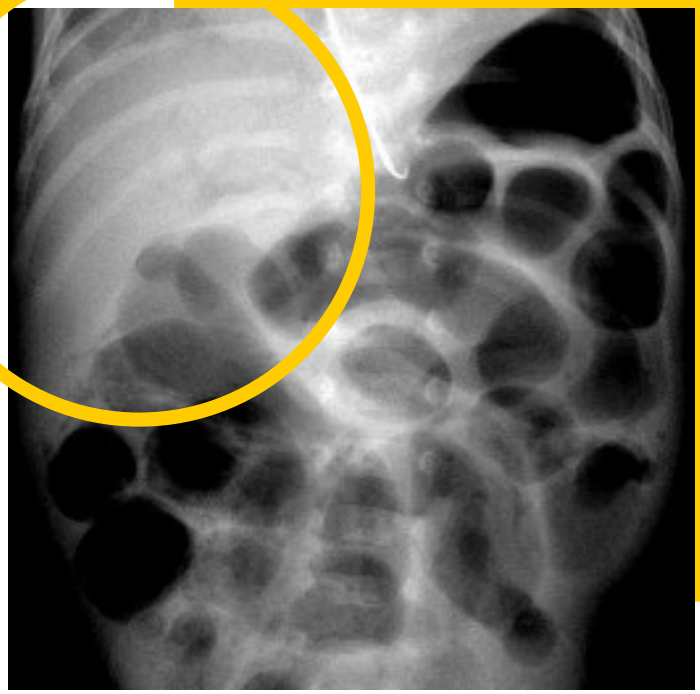
For those who missed it this month we had a great teaching session on necrotising enterocolitis by Dr Hasan. Dr Pramod took us through some of the x-ray features seen on abdominal films in NEC. Here are some of them.



PNEUMATOSIS (PNEUMATOSIS INTESTINALIS)

- Intramural gas, gas within the layers bowel wall.
- bubbles of gas in the bowel wall give a 'soap-bubble' appearance
- gas can also track along the bowel wall, giving the outlining appearance seen here

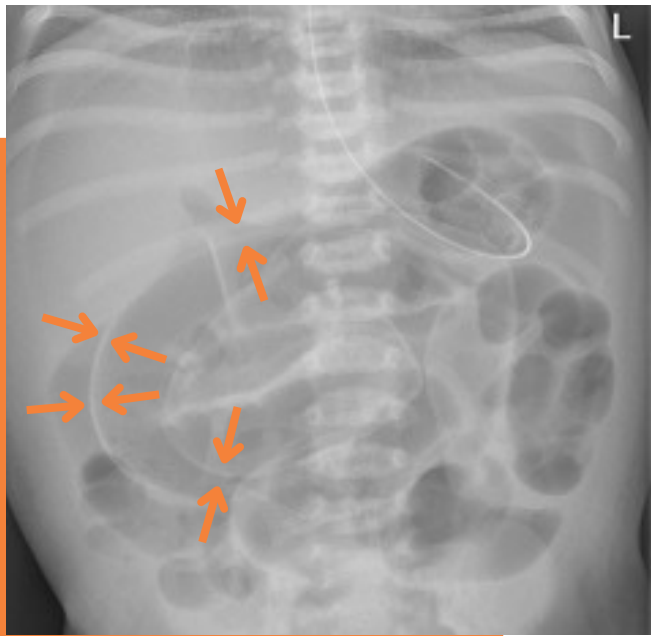
Case courtesy of Dr Hani Makky Al Salam, Radiopaedia.org. From the case rID: 9793



PORTAL VENOUS GAS

- accumulation of gas within the portal vein
- may be seen following UVC insertion where NEC is not suspected

Case courtesy of Rad_doc, Radiopaedia.org. From the case rID: 47589



RIGLER SIGN

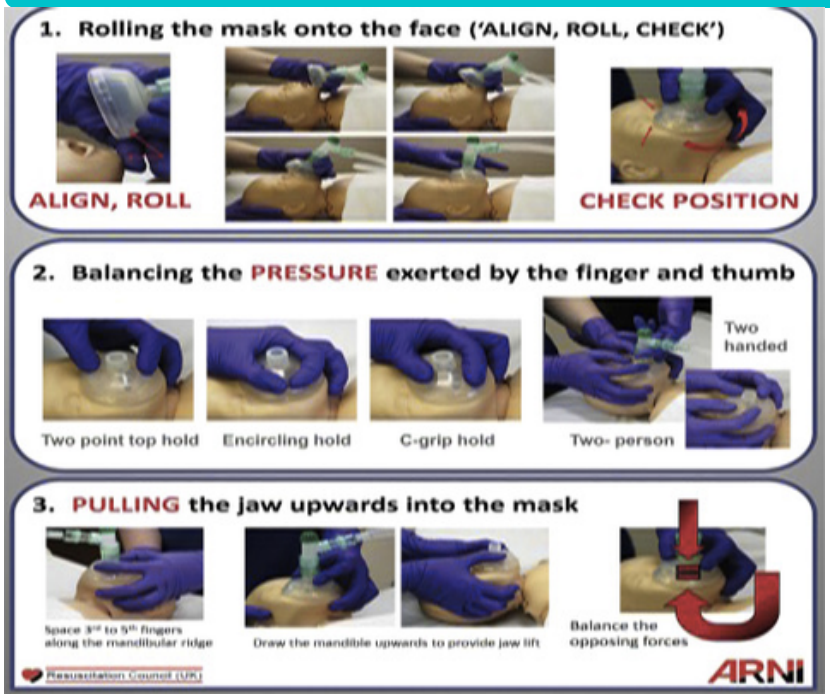
- gas can seen either side of the bowel wall indicating pneumoperitoneum

Case courtesy of Dr Jeremy Jones, Radiopaedia.org. From the case rID: 62793

FURTHER READING

- Soni R, Katana A, Curry JI, et al How to use abdominal X-rays in preterm infants suspected of developing necrotising enterocolitis Archives of Disease in Childhood - Education and Practice 2020;105:50-57.

SIMULATION TEACHING LEARNING POINTS



- Ensure that your team works in closed looped communication, and this includes midwifes and parents!
- Be aware of your surroundings and if something or someone is impeding access to the patient
- There is no shame in getting out the guidelines!
- There are checklists for procedures that will prompt the team to work effectively
- Remember documentation! This includes actually prescribing the medications you need in a resus scenario

NEONATAL VENTILATION TEACHING

PROBLEM	POSSIBLE SOLUTIONS
↓ Oxygenation ↓ PaO2/saturations	↑ FiO2 ↑ MAP
↑ Oxygenation ↑ PaO2/saturations	↓ FiO2 ↓ MAP
Over-ventilation (↑pH + ↓PaCO2)	↓ Tidal Volume ↓ Rate
Under-ventilation (↓pH + ↑PaCO2)	↑ Tidal Volume ↑ Rate

INITIAL VENTIALTION SETUP

VOLUME GUARANTEE

TIDAL VOLUME 4-6ML/KG

RATE 50 (TERM), 60 (PREM)

INSPIRATORY TIME 0.35

PEEP 5-6CM H20

ACUTE DETERIORATION IN A VENTILATED BABY THINK DOPE

D ISPLACEMENT

- Auscultate, look at ET the tube
- Look at the ventilator (high leak, no expiratory flow)

O BSTRUCTION

- ? secretions/blood, Suction
- Reduced (squashed) flow loops
- Reduced tidal volumes

P NEUMOTHORAX

- Check chest expansion, ausculate
- Cold light/ urgent CXR
- Reduced flow loops on ventilator

E QUIPMENT FAILURE

- Look at the baby, check circuit
- ? high leak/no expiratory flow
- Manually ventilate (bag)