medical records. All infants underwent postnatal cardiac ECHO, electroencephalogram and brain MRI, along with calculation of Bicetre severity score at admission. Embolization procedures were analysed based on timing and presence of peri- and post-procedural complications. Long-term survivors had standard neurocognitive assessment.

For the purpose of outcome analysis we divided patients into two period cohorts: 2001-2010 and 2011-2020.

Overall fourteen out-born neonates were diagnosed with chorioidal VGAM. Bicetre neonatal score were similar in both chronological sub-groups. First cohort comprised six neonates. Prenatal diagnosis of VGAM was obtained in one patient. Four newborns died owing to refractory heart failure without neuroembolization procedure. Two survivors underwent the intervention at fourth and eleventh day, respectively. Post-procedural analysis revealed minor intraventricular bleeding and neonatal seizures in one patient that eventually has been lost to follow up. Other survivor developed ischaemic lesions and hydrocephalus. Ventriculo-peritoneal drainage was performed.

Severe neurodevelopmental delay and visual impairment were observed on follow-up. Second cohort comprised eight neonates, all prenatally diagnosed. Three patients died: at the age of five (intra-procedural rupture of aneurism), fifteen (multi-organ failure), and 205 days (pulmonary hypertension and congestive heart failure). All infants undergone the first embolization within the first ten days of life. Satisfactory immediate outcome including control of cardiac failure was achieved in six patients. Post-procedural analysis revealed minor intraventricular bleeding (n=2), ventriculomegaly (n=2), presence of ischaemic lesions (n=2), neonatal seizures (n=2) and abnormal encephalogram (n=2). Normal neurodevelopment was observed in four, and mild neuro-developmental delay was observed in one patient on follow-up.

Given a small sample size it is difficult to quantify the difference between the two groups in a statistically relevant manner. However, the observed difference in survival and long-term outcome between the cohorts are most probably related to an overall improvement of prenatal diagnosis, intensive care management and embolization techniques. Early neuroembolization may decrease the risk of refractory cardiac failure and improve the long-term neurocognitive outcome.

125

IS THERE A GOOD CORRELATION OF MAGNETIC RESONANCE IMAGING AND CRANIAL ULTRASOUND IN BRAIN IMAGING IN PRETERM INFANTS AT TERM AGE?

Benjak Vesna*, Ninković Dorotea, Čaleta Tomislav, Vukšić Iva, Dasović Buljević Andrea, Bunoza Branka, Grđan Petra, Radoš Milan, Grizelj Ruža. *Clinical hospital centre Zagreb*

10.1136/archdischild-2021-europaediatrics.125

The aim of this study was to compare MRI findings in pre-term infants at term age with cranial ultrasounds as predictors in the assessment of neurodevelopment outcomes and need for early habilitation procedures.

The study included 64 premature infants gestational age under 32 weeks who were admitted in NICU at University Hospital Centre Zagreb between years 2013. and 2016. and underwent brain MRI examination. 53,12% examinees were boys and 48,8% were girls. Mean gestational age was 29,0 (+/-3,2) weeks, and mean birth weight was 1336 (+/- 466) g. Reanimation at birth was necessary in 50% of examinees. Some method of mechanical ventilation (invasive or

noninvasive) was used in 70% of examinees, in duration of approximately 22 (1-150) days. Cranial ultrasound scans were performed at the age of one day, four days and seven days and then once a week and at term age. Brain MRI examinations were performed at gestational age of 32 weeks and at term age. A statistical analysis of the correlation of ultrasound findings and brain MRI examinations at term age was performed. Cranial ultrasound findings were classified into four group by presence of IVH or leukomalacia: (0-normal finding; 1-mild hyperechogenicity or IVH grade I/II; 2-IVH with ventricular dilatation or presence of periventricular cysts; 3-ventriculomegaly or hydrocephalus and severe periventricular leukomalacia) and in two groups by presence of talamic lesions (present or not present).

MRI findings were classified as normal, mildly abnormal (mild gliosis); moderately abnormal (ventricular dilatation with gliosis, talamic lesions) and severely abnormal group (severe gliosis/PVL and hydrocephalus).

Group of examinees with Apgar score < 5 after 1st minute had moderately to severely abnormal MRI findings. Mechanically ventilated premature infants showed statistically significantly higher ($p < 0,001$) correlation with severe MRI abnormalities.

Comparison of ultrasound and MRI findings didn't show good correlation (Kendall Tau= 0,715; $p < 0,05$). Hi-square test showed ultrasound scans statistically significantly overestimate the number of premature infants with lesions (presence of IVH or leukomalacia). The number of talamic lesion was also overestimated by ultrasound scans (Hi-square test 8,824; $p = 0,004$).

But, correlation between methods considering moderately to severely abnormal MRI findings was better (Hi-square test 13,53; $p = 0,003$).

Magnetic resonance imaging is superior method comparing to brain ultrasound, but despite that brain ultrasound is still unavoidable as standardized routine screening method. Together they form the gold standard in the assessment of neurodevelopment outcomes and need for early habilitation procedures in premature infants.

126

A BROKEN NEC: CASE STUDY OF IDIOPATHIC SUPERIOR MESENTERIC VEIN THROMBOSIS IN A PREMATURE NEONATE

Cormac Duff*, Niazy Al Assaf. *University Maternity Hospital, Limerick*

10.1136/archdischild-2021-europaediatrics.126

Introduction Neonates are the pediatric population at highest risk for development of venous thromboembolism.¹ Intravascular catheters are a major risk factor.

Other risks include prematurity, neonatal asphyxia and sepsis.² Neonatal superior mesenteric venous thrombosis has not previously been described in medical literature.

Case A preterm female infant was born by emergency Caesarean section at 28 weeks' gestational age, weighing 760g. The indication was severe symmetrical intrauterine growth restriction and absent end diastolic flow.

Her mother was an Irish 23-year-old primigravida, with a background of severe depression and smoking. The neonate required continuous positive airway pressure (CPAP) and artificial surfactant. She required an umbilical venous catheter

(UVC), umbilical arterial catheter (UAC) and Peripherally Inserted Central Catheter (PICC).

The infant developed recurrent abdominal distension, associated with bilious aspirates and vomits. On examination, the abdomen appeared tense and shiny, with dilated veins. Necrotising enterocolitis (NEC) was suspected and enteral feeds were held repeatedly. Plain film abdominal x-rays revealed bowel distension. However they did not identify other radiological features of NEC or perforation, such as pneumatosis intestinalis or pneumoperitoneum.

Coagulation screens were normal. On Day 36, the infant's clinical condition rapidly deteriorated. She developed a grossly distended abdomen, associated with increased oxygen requirement and desaturations. She required ventilation, inotropic support and transfer to a tertiary centre. She continued to deteriorate and further treatment was considered futile. Following discussion with her parents, palliative care was introduced and she passed away shortly afterwards.

Subsequent postmortem examination revealed idiopathic superior mesenteric vein thrombosis.

Discussion A differential diagnosis for neonatal abdominal distension and bilious vomiting includes necrotising enterocolitis (NEC), intestinal malrotation and volvulus.³ Superior mesenteric vein thrombosis causes chronic, recurrent and progressive devitalisation of the small bowel wall. It is associated with pre-terminal neutropaenic sepsis and peritonitis.⁴ It may be caused by an unidentified congenital thrombophilia.⁵ Conclusion In refractory cases of suspected NEC, venous thromboembolism should be considered. Abdominal x-ray findings are non-specific and are unlikely to contribute to a correct diagnosis. More specific investigations include Doppler ultrasound and CT angiography.⁶

REFERENCES

1. Haley KM. Neonatal venous thromboembolism. *Front Pediatr* 2017;5:136. Published 2017 Jun 6. doi:10.3389/fped.2017.00136
2. Demirel N, Aydin M, Zenciroglu A, Bas AY, Yerali N, Okumus N, Cinar G, Ipek MS. Neonatal thrombo-embolism: risk factors, clinical features and outcome. *Ann Trop Paediatr* 2009 Dec;29(4):271-9. doi:10.1179/027249309X12547917868961. PMID: 19941750.
3. Sanlorenzo L, Grossarth S, Weitkamp J. Case 3: abdominal distention in a preterm infant. *NeoReviews* June 2020;21(6):e411-e413; DOI:https://doi.org/10.1542/neo.21-6-e411
4. Hmoud B, Singal AK, Kamath PS. Mesenteric venous thrombosis. *J Clin Exp Hepatol* 2014;4(3):257–263. doi:10.1016/j.jceh.2014.03.052
5. Makoto I, Usui M, Wada H, et al. Congenital thrombophilia in patients with superior mesenteric venous thrombosis or portal vein thrombosis. *Clin Appl Thromb Hemost* 2018;24(7):1117–1121. doi:10.1177/1076029618774146
6. Michelle S Bradbury, Peter V Kavanagh, Robert E Bechtold, Michael Y Chen, David J Ott, John D Regan, Therese M Weber. Mesenteric venous thrombosis: diagnosis and noninvasive imaging. *RadioGraphics RSNA* May 1 2002. https://doi.org/10.1148/radiographics.22.3.g02ma10527

127

CRAZYTAXY: CASE REPORT OF HETEROTAXY SYNDROME WITH POLYSPLÉNIA

Cormac Duff*, Blánaid Morrissey, Niaz Al-Assaf, Rizwan Khan. *University Maternity Hospital, Limerick, Ireland*

10.1136/archdischild-2021-europaediatrics.127

Introduction Heterotaxy syndrome is a rare congenital defect. It affects the anatomical position and function of visceral organs. Its clinical signs and symptoms are highly variable.¹ Antenatal and postnatal investigations and management should be tailored to each individual.

Case Antenatal ultrasound at 13 weeks' gestation suggested total situs inversus. At 21 weeks, ultrasound revealed a mid-line liver, a right-sided stomach and left atrial isomerisation. Antenatal foetal echocardiogram confirmed an azygous continuation of the inferior vena cava. Heart structure was otherwise normal.

The female infant was born at 39+3 weeks by elective C-section. She did not require neonatal resuscitation. She was admitted to NICU and kept NPO, pending further investigations.

Abdominal ultrasound confirmed a midline liver and gall-bladder. The stomach and multiple splenules were visualised in the right upper quadrant. An upper GI contrast revealed intestinal malrotation, with no evidence of obstruction. A blood film identified Howell Jolly bodies. ECG showed normal sinus rhythm. ECHO displayed a small VSD and confirmed antenatal echocardiogram findings.

Following consultation with the Paediatric Surgery team, enteral feeds were introduced on Day Two. Phenoxymethylpenicillin was prescribed indefinitely, on the advice of Paediatric Immunology. The patient was discharged on Day Eight. Out-patient follow-up is planned with Neonatology, Cardiology and Immunology.

Discussion Situs inversus is genetically heterogenous, with variable inheritance patterns. A differential diagnosis should include Heterotaxy Syndrome and Kartagener's Syndrome (primary ciliary dyskinesia).² Antenatal echocardiogram identifies potentially life-threatening cardiac anomalies. Some neonates may require pacemaker insertion for congenital heart block.³ Serial antenatal ultrasound is recommended to exclude hydrops fetalis.

Abdominal ultrasound and blood film are essential to assess splenic function. Asplenia or polysplenia spleen poses a higher risk from encapsulated organisms, such as Streptococcal pneumoniae. Lifelong phenoxymethylpenicillin may be necessary to prevent sepsis or meningitis.⁴ Conclusion Heterotaxy Syndrome is rare, complex congenital disorder. Antenatal investigations are essential to determine foetal viability and inform neonatal management. Neonates require an array of postnatal investigations and may require long-term subspecialty follow-up.

REFERENCES

1. Kim SJ. Heterotaxy syndrome. *Korean Circ J*. 2011;41(5):227-232. doi:10.4070/kcj.2011.41.5.227
2. Shapiro AJ, Tolleson-Rinehart S, Zariwala MA, Knowles MR, Leigh MW. The prevalence of clinical features associated with primary ciliary dyskinesia in a heterotaxy population: results of a web-based survey. *Cardiol Young* 2015;25(4):752-759. doi:10.1017/S1047951114000912
3. Escobar-Diaz MC, Tworetzky W, Friedman K, Lafranchi T, Fynn-Thompson F, Alexander ME, Mah DY. Perinatal outcome in fetuses with heterotaxy syndrome and atrioventricular block or bradycardia. *Pediatr Cardiol* 2014 Aug;35(6):906-13. doi: 10.1007/s00246-014-0874-x. Epub 2014 Feb 9. PMID:24509635; PMCID: PMC4331180.
4. Kothari SS. Non-cardiac issues in patients with heterotaxy syndrome. *Ann Pediatr Cardiol* 2014;7(3):187–192. doi:10.4103/0974-2069.140834

128

CLAMPING MY STYLE: CASE SERIES OF RECURRENT NEONATAL BLOOD TRANSFUSIONS ASSOCIATED WITH IMMEDIATE CORD CLAMPING

Cormac Duff*, Irene Beirne, Niaz Al-Assaf, Khorshed Khalifa. *University Maternity Hospital, Limerick, Ireland*

10.1136/archdischild-2021-europaediatrics.128