We confirmed that the severe underuse in POCUS application was not due to a lack of enthusiasm, but rather a lack of training. The large majority of our respondents believe POCUS to be an essential adjunct to paediatric emergency medicine, however its user-dependency in the absence of well-established training severely restricts its potential as a diagnostic and procedural tool. Given current circumstances, an endeavour into implementing standardised teaching in post-graduate training would be worthwhile. The role of POCUS could prove useful in this COVID era, such as the potential to reduce clinician's exposure to the virus in the examination of COVID lung pathologies.

British Association of Perinatal Medicine and Neonatal Society

1462 OPTIMAL LEVEL AND BEVEL POSITION FOR ENDOTRACHEAL TUBES IN PRETERM NEONATES

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Background Most acceptable endotracheal tube (ET) tip position quoted in literature is between T1 and T2 vertebrae. Currently, there is no standards in term of optimal endotracheal tube bevel position in neonates.

Objectives Prevalence of right upper lobe collapse/consolidation (RUC) and its association with various ET bevel and level position.

Methods In this retrospective single center study (level 3 neonatal unit), chest radiographs of ventilated extreme preterm neonates (≤ 28 weeks) were reviewed for a period of two years (2019 and 2020). Data was collected for ET tip position, bevel position, presence or absence of right upper lobe collapse. Multiple X-rays taken on different days from the same baby were included for the X-ray analysis. We defined sub-optimal ET position when the ET tip is above T1 or at/below T3 vertebrae.

In our unit, we used the formula $6 + \text{body weight in kg}$ for fixing ET and always confirmed by chest X-ray. RUC is a discrete common lung pathology in preterm infants and hence used in his study. The project was registered with hospital authorities and approved by the audit department.

Results 429 X-rays from 104 preterm infants on mechanical ventilation were reviewed. After exclusion 419 X-rays were available for analysis (10: incomplete X-ray information). Mean birth gestational age in weeks and birth weight in grams ($\pm$ SD) were 25.9 ± 1.7 and 847.5 ± 248 respectively. Number of X-rays with (Sub-optimal) ET tip above T1 and $\geq$ T3 vertebrae were 58 (14%) and 128 (30.5%) respectively. There were 349 (83%) X-rays with ET tip bevel facing left side. There was 57 (13.6%) X-rays with definitive diagnosis of RUC. 21 (37%) cases of RUC occurred despite the optimal ET tube position. Odds ratio and statistics were calculated for RUC with bevel facing left and different ET position were calculated (table 1).

Limitations: Some of the preterm infants might have had persistent RUC in subsequent X-rays, which would have falsely increased the prevalence of RUC.

Conclusions In our study, 44% of ET were in sub-optimal position and commonly fixed with bevel facing left side

Abstract 1462 Table 1

ET Tip position with vertebrae body	Proportion of infants with RUC	Odds ratio	P-value
Above T1	7/58 (12%)	0.85 (0.31–2.0)	0.83
T1	10/59 (17%)	1.35 (0.57–2.9)	0.41
T1-T2 (intervertebral space)	1/43 (2%)	0.13 (0.003–0.83)	0.01
T2	10/86 (11.6%)	0.79 (0.34–1.7)	0.60
T2-T3 (intervertebral space)	8/45 (17.7%)	1.4 (0.54–3.3)	0.36
T3	11/65 (17%)	1.35 (0.59–2.9)	0.43
Below T3	10/63 (15.8%)	1.23 (0.52–2.7)	0.55
ET bevel facing left	50/349 (14%)	1.5 (0.63–4.1)	0.44
ET bevel facing left but excluding at or below T3	34/241 (14%)	3.9 (0.93–34)	0.05
ET bevel facing left but excluding above T1	44/305 (14.4%)	1.4 (0.54–4.2)	0.49
ET bevel facing left between T1 & T2	20/159 (12.5%)	3.88 (0.5–30.1)	0.20

(83%). RUC is commonly noted (13.6%) discrete lung pathology. Bevel facing left side in the optimal position could play a role in pathogenesis of RUC. Further insight is needed in terms of optimal ET bevel position. RUC could be reduced by placing the ET between T1-T2 (OR: 0.13 (0.003–0.83)).

British Society of Paediatric Gastroenterology, Hepatology and Nutrition

1463 THE IMPACT OF CARING FOR A CHILD WITH A GASTROSTOMY – A SYSTEMATIC REVIEW

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Background Gastrostomy insertion in a child is the start of a long-term commitment. The physical benefits of a gastrostomy in ensuring adequate nutrition and growth are well recognised. Less well recognised are the social and psychological effects of gastrostomy insertion on the family caring for the child.

Objectives To determine the psychological and social impacts of a gastrostomy in childhood on carers and families.

Methods An electronic search of Medline and Embase was undertaken in September 2020 using a combination of the relevant subject heading (MeSH) terms, key words and word

variants for 'gastrostomy', 'children' and 'carers'. Studies were limited to those: describing the impact of gastrostomies in children on the family and carers, published in English after 2000.

Results 444 articles were identified. After exclusion of duplicates and abstract and full text screening, 26 studies were included. The number of care providers included in the studies ranged from 10–302 (median 50). Assessment tools used included Zarit Caregiver Burden Scale (Zarit scale), Caregiver Strain Index (CSI), State-Trait Anxiety Inventory (STAI), Quality of Life Scale (SF-36) and Satisfaction Questionnaire with Gastrostomy Feeding (SAGA-8).

- Insertion

Carer anxiety tends to increase in the period leading up to, and for a short period following gastrostomy insertion. This anxiety may be exacerbated by the carers' inherent personality traits, the severity of a child's condition, and lack of a support network.

- Medium term

3–6 months after gastrostomy insertion, several studies reported reduced anxiety (reduced STAI scores), or improved carer reported quality of life (higher SF-36 scores), largely as a result of reduced feeding times. Implementation of care education was demonstrated to reduce carer anxiety (lower STAI scores). Carer satisfaction with the child's gastrostomy (improved SAGA-8 scores) also increased 3–6 months following insertion. This may be in part related to appreciation of their child's improved nutrition. The majority of carers would recommend a gastrostomy to the carer of a child in a similar position, with a significant minority reporting wanting it to have been inserted earlier.

- Longer term

Overall carer quality of life following a child's gastrostomy insertion was found to improve in 3 studies (decrease in CSI scale and increased SF-36 II score). The decrease in CSI can be attributed to reduction in care burden and the carer's increased confidence. However, another 3 studies found that carer quality of life was reduced (increase in CSI scale), due to communication problems with the child, food, and social restrictions. An enduring source of stress for carers is how their child's gastrostomy is perceived by others.

Conclusions The social and psychological burden on caregivers of a gastrostomy in childhood varies over time. An initial dip is followed by an enduring overall improvement beginning from 3 months post-insertion. There is evidence that paediatric gastrostomy has long-term positive effects on carer burden and quality of life, however some aspects of carers' quality of life remain impaired.

Carer education and support, as well as education of the public with respect to feeding tubes, is vital to reduce the burden placed on carers.

British Paediatric Neurology Association

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TIME TO AETIOLOGICAL DIAGNOSIS IN CHILDREN PRESENTING WITH EPILEPSY AT A TERTIARY CLINIC: A SERVICE EVALUATION

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Background In order to treat epilepsy, classification is key. The International League Against Epilepsy (ILAE) published guidelines on classifying epilepsy in 2017, emphasising the importance of aetiology, rather than syndrome. The ILAE laid out 6 main categories: structural, genetic, inflammatory, infectious, metabolic and unknown.

NICE recommend that EEG and MRI are used to help diagnose and classify epilepsies within a target time of 4 weeks.

Objectives This service evaluation was approved by the University of Southampton ethics committee. The aims were: to establish waiting times for investigations, primarily EEG and MRI, in children presenting with epilepsy; to document the proportion of children receiving an aetiological classification for their epilepsy and to determine how long this took to reach.

Methods Data were collected from clinical records of children with epilepsy attending one of the Paediatric Neurology clinics at University Hospital Southampton between 2010–2019. Time to diagnosis, EEG, MRI and aetiological classification were measured in weeks. The data were analysed using descriptive statistics (SPSS).

Results Twenty-nine (72.5%) of the 40 children (22 boys), presenting at a median age of 3.25 years (range 0 to 15 years), received an aetiological diagnosis. Most common was structural aetiology (17/40, 42.5%) with median time to diagnosis of 7 weeks (range 0–60 weeks), followed by genetic with a median time of 64 weeks (range 0–55 weeks), (Mann-Whitney, $p=0.067$). Ten patients had a genetic abnormality confirmed by testing, 8 in the genetic category and 2 structural with a genetic basis. In 19 children, there was an epilepsy syndrome diagnosis: 8 focal symptomatic epilepsy, 3 benign epilepsy with centrotemporal spikes, and one each with focal and idiopathic generalised, generalised epilepsy, childhood absence, myoclonic absence, paroxysmal upgaze of childhood with absences, juvenile myoclonic, West and Lennox-Gastaut syndromes. The proportion of patients receiving investigations in ≤ 4 weeks was 46.2% for EEG and 28.2% for MRI. Age was an important factor for referral, with children aged ≤ 1 year referred to (median 0 [range 0–25] weeks) and seen by a specialist (4 [0–14] weeks) faster than children aged > 1 year (6 [0–286]; $p=0.041$ and 14 [2–115]; $p=0.002$ weeks respectively; Mann-Whitney). Those children who waited longest for EEG also waited longest for MRI (Spearman's rank $p=0.0004$). There were no significant differences in waiting time for investigations by location ($p=0.431$ for EEG and $p=0.271$ for MRI; Kruskal-Wallis) or by aetiology ($p=0.396$ for EEG and $p=0.297$ for MRI; Kruskal-Wallis).

Conclusions In recent years there have been many advances in epilepsy classifications and treatment, alongside which we would hope to see an improvement in the delivery of care, however there are still several shortfalls apparent, particularly for those aged > 1 year.

With recent advances in the field of epilepsy, especially in genetics, it may be that aetiological classifications have become more complex. In the meantime, syndrome classification may continue to play a role in treatment and prognosis. Further research into the reasons for the delays in investigation and classification of epilepsy would be useful to tackle the shortfalls.